



P30

Product Reference Guide

Rev. 2.9

June-2025

www.penguinid.com/



Disclaimer

Please read the manual carefully before using the product and follow the instructions provided. It is recommended to keep this manual for future reference.

Do not disassemble the device or remove the seal label, as this will void the warranty and replacement responsibility of Penguin ID LLC.

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Patent Pending.

Revision History

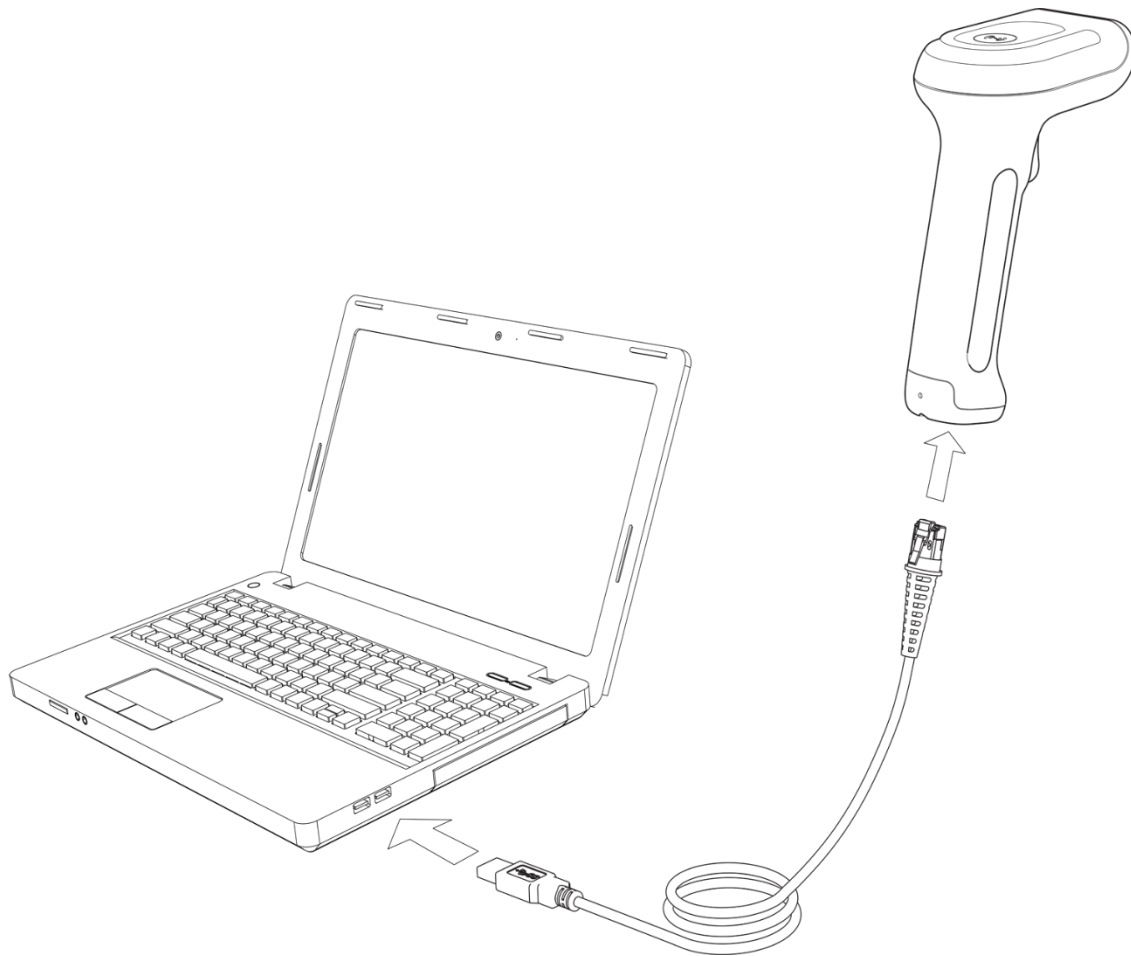
Version	Description	Data
V2.9	Initial Version	06-25-2025



Getting Started

- **Unbox Your Scanner:** Open the box and locate the USB cable and handheld barcode scanner.
- **Connect the Cable:** Attach the RJ-45 ends of the cable to the designated port on the handheld scanner. Ensure that the cable is securely locked into place to maintain a stable connection.
- **Plug into Your Computer:** Connect the USB Type-A connector to an available USB port on your desktop or laptop computer. Make sure the connection is firm to ensure proper communication between the scanner and your computer.

Your handheld scanner is now ready to use! Enjoy seamless barcode scanning for all your needs.



Note: Your default connection is via Virtual Com Port. To test your reading, you can download Demo Software zip file and see 'Demo-P30' App to examine the output. (See Page 8)



Scanner Operation

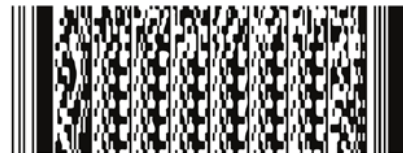
Reading Barcodes

P30 scanner is a versatile device designed to read a wide range of barcodes, including both 1D and 2D codes. This scanner is equipped with advanced technology that ensures accurate and efficient scanning, making it ideal for various applications such as retail, inventory management, and logistics. Its ergonomic design allows for comfortable use over extended periods, while its robust construction ensures durability in demanding environments. Whether you need to scan traditional linear barcodes or more complex QR codes, this handheld scanner provides reliable performance and seamless integration with your existing systems.

Linear 1D Barcodes



Two Dimensional barcodes



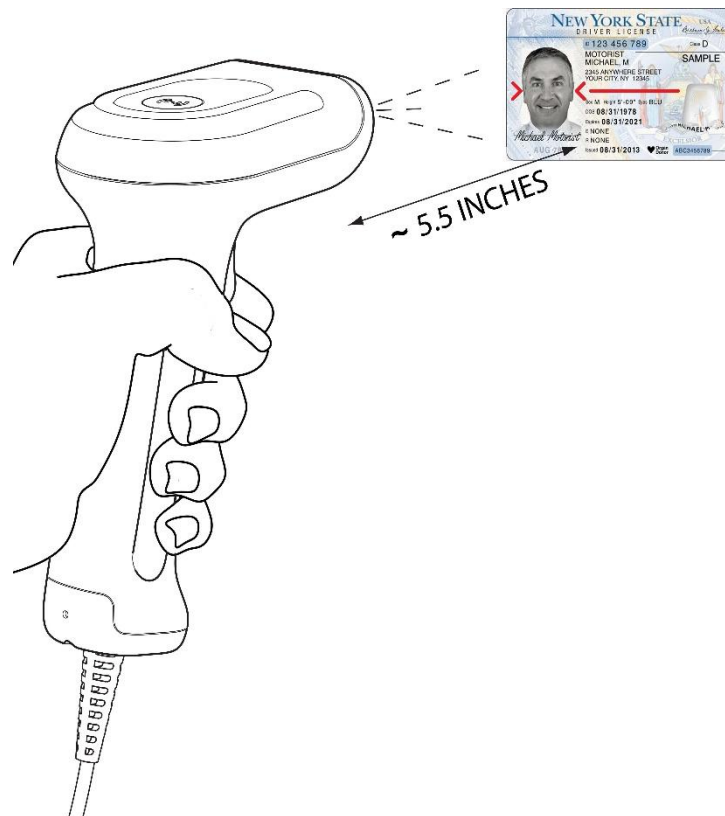
To read any type of barcode, press and hold the trigger and simply aim the scanner laser cross at the barcode. The scanner would read and decode the barcode followed by a single beep, and turning off the illumination and Laser light.





Detecting Faces

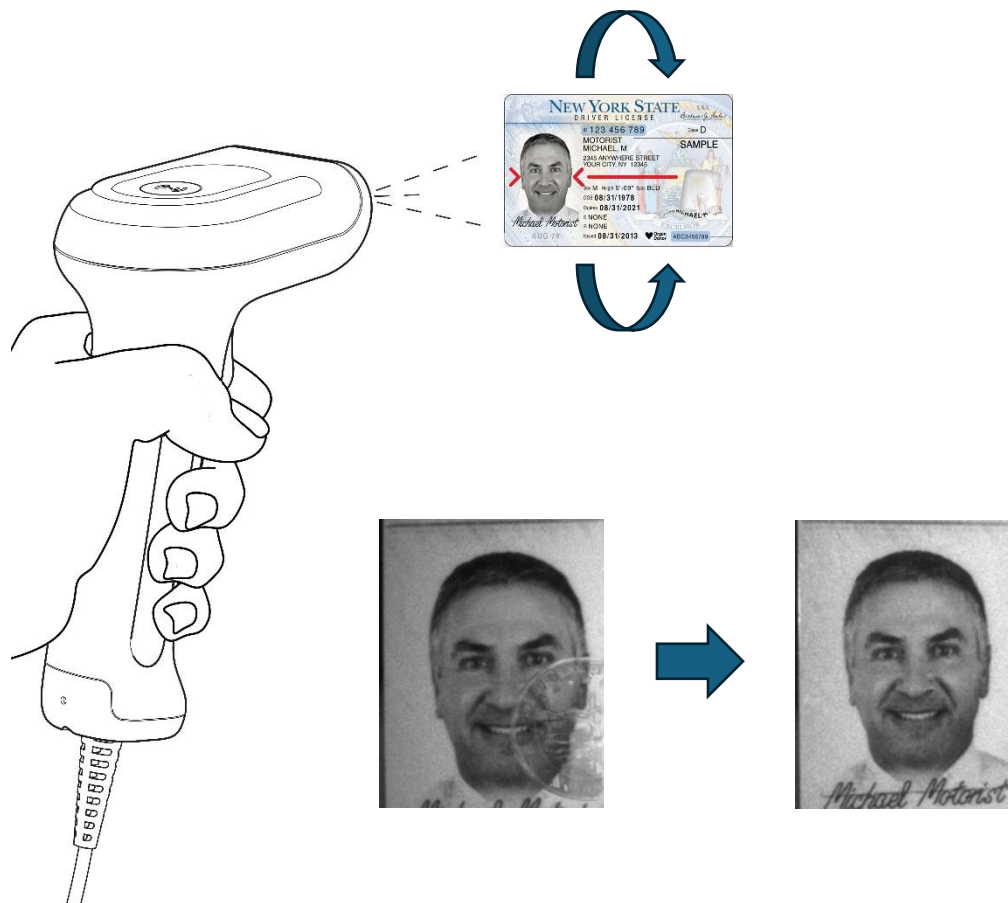
To capture a photo of an identification card, push and hold the trigger, then aim the laser cross at the right side of the person's photo. Refer to the image below for the laser cross location and size. This indicates that you have aimed the scanner correctly at the card. The distance to the ID should be approximately 5 to 6 inches.



Once the scanner successfully captures and detects a face in an image, it emits a beep. The image is then sent to the PC via a serial port. The captured image is always in JPEG format, with dimensions of 350W x 450H, and in grayscale.



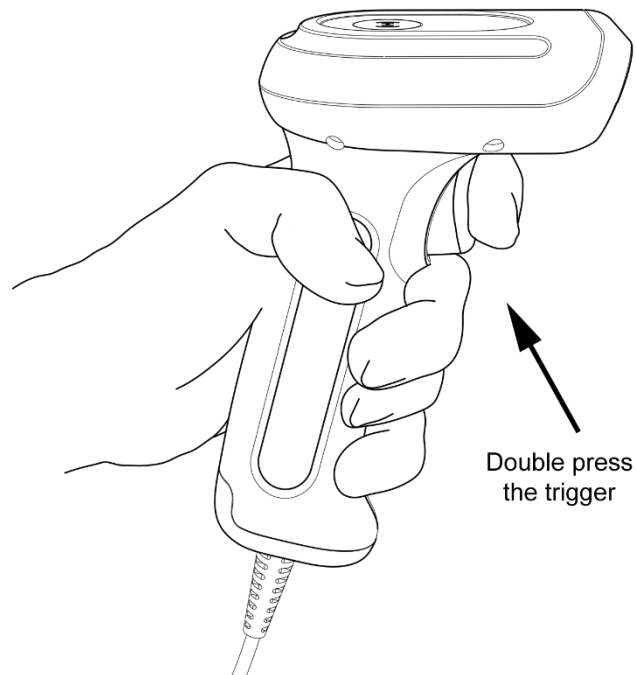
NOTE: If the captured photo has a watermark spot or low contrast, try recapturing by slightly rotating the height of the ID card away from or toward your scanner. This will help move the spot away from the photo area.





Undetected Faces and Manual Capturing

Occasionally, photos may have very low contrast or be damaged. In such cases, if the scanner cannot automatically detect a face from the ID card photo, you can manually instruct the scanner to capture the area. To do this, press the trigger twice and hold it, then aim the laser cross at the right side of the photo and wait for a beep

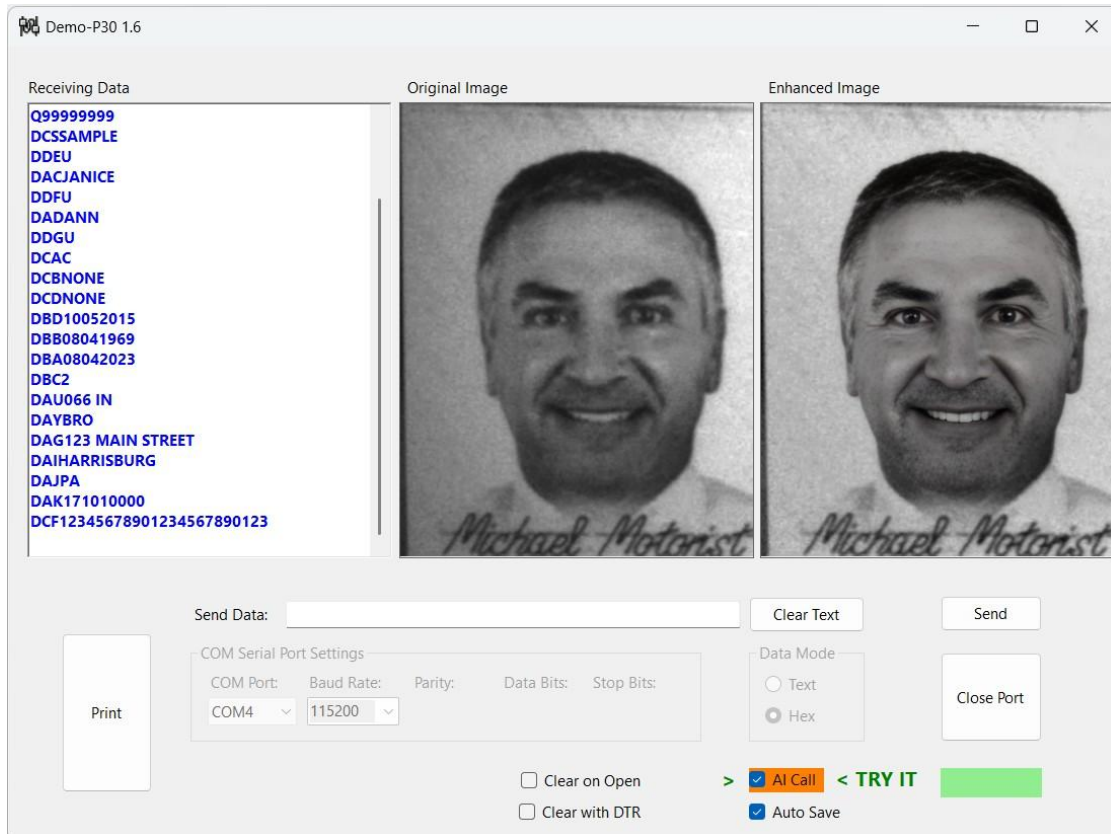


Once the scanner successfully captures an image, it emits a beep. The image is then sent to the PC via a serial port. The captured image is always in JPEG format, with dimensions of 350W x 450H, and in grayscale.



Scanner Demo Software

To test P30 scanner output, download the Demo Software zip file and in “Demo-P30” directory, run the exe file. This download includes source code that can assist with your future application development.



Connect the scanner to your computer and run the Scanner Demo software. From the pull-down menu, locate the correct port number and click the Open button. When you scan a barcode, the decoded value will appear in the left section of the app. If the scanner detects a photo, the JPEG image will be displayed on the right side as shown in the picture above. If Auto Save is checked, a copy of the photo will be saved in the same directory as your application. If AI call is checked, a copy of the photo will be sent to our server for AI enhancement.

The print function is for demonstrating label printing. In this application. For our downloaded application this feature is disabled. However, all source code is included in the download and commented out in the source code. For our test, we used a Brother “QL-820NWB” label printer to print a visitor badge.



AI Enhancements

The P30 scanner can detect the face of the document and crop it for downloading to a host computer. Optionally, this image can be enhanced via a cloud service by sending the original image and receiving back an AI-enhanced image.



Original image

Enhanced image

To use this service, obtain a HASH key from the PenguinID website or contact sales for further usage details. The HASH key will be incorporated into your code to communicate your subscription status with the server.

```
curl -X POST -F "file=@example-01.jpg" https://eightscans.com/upload.php?hash= -o processed_image.jpg

C#
string hash = "";
byte[] processedImageData = UploadImage(imageData, "https://eightscans.com/upload.php?hash=" + hash);
```

You can download the demo application, which includes source code that may help with future application development.

To evaluate this function, get a temporary HASH key. Without a valid HASH key, the function returns an enhanced image with a DEMO watermark.

For subscription information and pricing, contact PenguinID website or call a sales representative.



Programming Codes

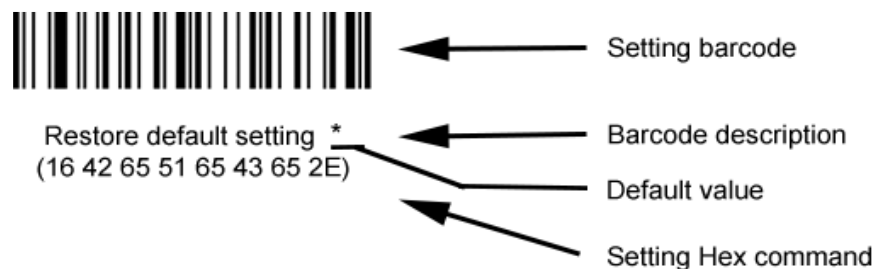
Introduction

This manual primarily explains how to configure the various functions of the scanner product.

There are two methods to set up the scanner:

1. **Configuration Barcode:** The scanner can configure its functions by reading one or more specific setting barcodes. In the following chapters, we will detail the available settings and functions, along with the corresponding barcodes.
2. **Configuration Command:** The host can configure the scanner by sending a set of hexadecimal strings. In the following chapters, in addition to the barcodes, we will also introduce the setting Hex command strings.

The scanner can be automatically operated by setting commands or barcodes. You can also integrate all relevant setting commands into the software through secondary development, and process relevant commands in batches.



When a command is sent to the scanner, it will return a corresponding string to indicate whether the command execution was successful or not.

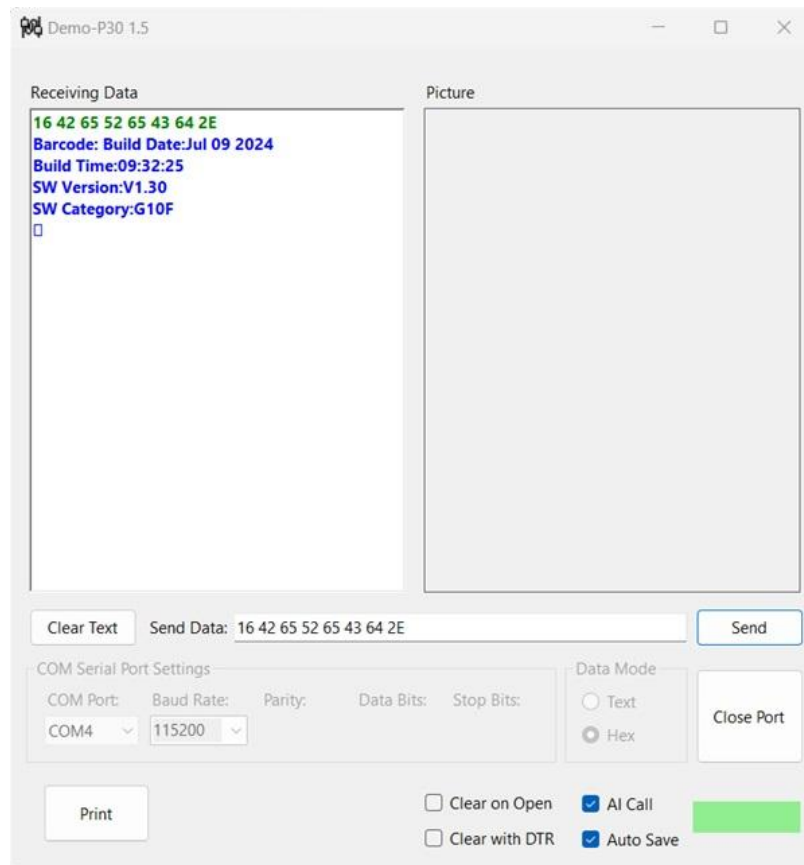
Successful execution returns (ACK): 0x06

Execution failure returns (NAK): 0x15



Sending Serial Command

To test the hexadecimal command settings via the serial port, use the “Demo-P30” application. This download includes source code that can assist with your future application development.



Trigger Instruction

These setting commands activate the scanner in the same way as pressing the trigger.

Start scan (hexadecimal): 16 42 65 52 65 51 62 2E

Stop scan (hexadecimal): 16 42 65 52 65 52 62 2E



Restore Factory Defaults

All barcode readers have a factory default setting. Reading the "Restore factory default settings" barcode will restore all barcode reader property settings to the factory state.



Restore factory default settings
(16 42 65 51 65 43 65 2E)

Check Version

Use the scanner to scan the version number bar code, you can view the current bar coder version number information.



Read firmware version
(16 42 65 52 65 43 64 2E)



Face Detection

This setting enables integrated intelligence to identify and detect a face within the targeted area.



Enable face detection *
(16 55 61 6C 62 43 62 2E)



Disable face detection
(16 55 61 6C 62 53 61 2E)



Enable Jpeg Sync Transfer *
(16 53 61 49 62 56 61 2E)



Disable Jpeg Sync Transfer
(16 53 61 49 62 4C 61 2E)

The P30 scanner utilizes an internal face detection engine to identify facial features in a captured photo. The image is then cropped to the person's face, rotated, brightness balanced, and converted to a JPEG file, which is sent to the host computer via a serial port. The data structure received is as follows:

Step 1: If "Jpeg Sync Transfer" is enabled, a string "JJ" (Hex 5D 4A 6A) will be sent, and an ACK (Hex 06) will be awaited for application. Upon receiving a response, the image data will be sent as described in step 2.

Step 2: The data begins with the word "FaceDetected" followed by carriage return and line feed characters, then the JPEG image data, and ends with the word "FaceDetected."

FaceDetected + [CR] + [LF] + JPEG data + FaceDetected

Or in Hex

<46 61 63 65 44 65 74 65 63 74 65 64 0D 0A> <JPEG data> <46 61 63 65 44 65 74 65 63 74 65 64>



Enable/Disable Setting Barcodes

This barcode enables the setting barcode to be used by reading it with the scanner. If disabled, any setting barcode read by the scanner will be ignored, and an error tone will sound. This option is useful for adding security, allowing programming of the scanner only via the serial port or both methods.



Enable setting command *
(16 52 61 5A 64 4E 61 2E)



Disable setting command
(16 52 61 5A 64 58 61 2E)

Sending Data of Setting Command

The content of the setting barcode can be echoed to the serial port. After reading the 'send the setting command', the content will be sent in ASCII value to the host when the setting barcode is read.



Send the setting command
(16 57 61 5A 61 42 62 2E)



Do not send setting command *
(16 57 61 5A 61 52 61 2E)

User Default Settings

In addition to the factory settings, users can save their frequently used configurations as user default settings. By scanning 'Save User Default Settings,' the current configuration information of the device can be saved as user default settings. If there are already user default settings in the reading module, the new configuration information will replace the original user default settings.



Save user default settings
(16 55 61 51 64 57 61 2E)



Restore user default settings
(16 42 65 51 65 45 65 2E)

Sound Settings



Turn on all prompts *
(16 57 61 5A 61 43 62 2E)



Turn off all prompts
(16 57 61 5A 61 53 61 2E)



Turn on the boot sound *
(16 52 61 4F 64 4E 61 2E)



Turn off the power-on prompt
(16 52 61 4F 64 58 61 2E)



Turn on the setting code prompt sound
(16 57 61 5A 61 5A 61 2E)



Turn off the setting code prompt
(16 57 61 5A 61 50 61 2E)



Turn on the decoding success tone *
(16 52 61 44 65 58 61 2E)



Turn off the decoding success tone
(16 52 61 44 65 4E 61 2E)



Short time for successful decoding
(16 52 61 43 65 5A 61 2E)



Normal time for successful decoding *
(16 52 61 43 65 50 61 2E)



Decoding successful prompt audio
frequency-1.6KHZ lower
(16 4C 62 44 65 55 62 2E)



Decoding successful prompt audio
frequency-low to medium 2.0KHZ
(16 4C 62 44 65 45 63 2E)



Decoding successful prompt audio
frequency-medium 2.7KHZ
(16 4C 62 44 65 41 62 2E)



Decoding successful prompt audio
frequency-4.2KHZ higher
(16 4C 62 44 65 4B 62 2E)



Decoding successful prompt volume off
(16 42 62 44 65 50 62 2E)



Decoding successful prompt volume low
(16 42 62 44 65 46 62 2E)



Decoding successful prompt volume
medium
(16 42 62 44 65 56 61 2E)



Decoding successful prompt volume high *
(16 42 62 44 65 4C 61 2E)



Error warning tone-low frequency *
(16 47 62 5A 61 4E 61 2E)



Error warning tone- medium frequency
(16 47 62 5A 61 58 61 2E)



Error warning tone-high frequency
(16 47 62 5A 61 48 62 2E)



Indicator Light Settings



Turn on the indicator light for successful
barcode reading *
(16 52 61 42 65 59 61 2E)



Turn off the indicator light for successful
barcode reading
(16 52 61 42 65 4F 61 2E)



Reminder light-standby, long off, working on
*
(16 57 61 41 62 52 61 2E)



Reminder Light-Standby is always on and
work is off
(16 57 61 41 62 42 62 2E)



Turn on the fill light *
(16 47 62 57 61 48 62 2E)



Turn off the fill light
(16 47 62 57 61 4E 61 2E)



Turn on the aiming light *
(16 47 62 57 61 5A 61 2E)



Turn off the aiming light
(16 47 62 57 61 50 61 2E)



Aiming light flashes
(16 47 62 57 61 54 62 2E)



The aiming light keeps on
(16 47 62 57 61 4A 62 2E)



Data Output Format

To ensure the correct output according to the specified encoding format, you need to scan the Unicode setting barcode for applications like Word documents. For applications like Excel or Notepad, scan the Codepage setting barcode.



Data output format-Codepage *
(16 47 62 42 62 56 61 2E)



Data output format-Unicode
(16 47 62 42 62 46 62 2E)

USB Keyboard Interface



USB-KBW interface
(16 56 62 5A 63 57 61 67 2E)

The keyboard key arrangement, symbols, and other elements vary across different national languages. The scanner can be virtualized into various countries' keyboard formats based on actual needs. The keyboard layout setting applies to the USB-KBW interface mode, with the default being the "American English keyboard".



American English *
(16 4A 64 43 63 54 63 2E)



Greece
(16 4A 64 43 63 4C 62 63 2E)



Netherlands
(16 4A 64 43 63 47 62 63 2E)



Swiss German

(16 4A 64 43 63 43 62 63 2E)



Denmark

(16 4A 64 43 63 45 62 63 2E)



Italy

(16 4A 64 43 63 5A 62 2E)



German

(16 4A 64 43 63 42 62 63 2E)



Spain

(16 4A 64 43 63 4A 63 2E)



Brazil

(16 4A 64 43 63 4C 61 2E)



British English

(16 4A 64 43 63 44 62 63 2E)



France

(16 4A 64 43 63 46 62 2E)



Hungary

(16 4A 64 43 63 4E 62 63 2E)



Sweden

(16 4A 64 43 63 52 62 63 2E)



Portugal

(16 4A 64 43 63 49 62 63 2E)



Belgium

(16 4A 64 43 63 5A 61 63 2E)



Turkish-Q

(16 4A 64 43 63 58 61 63 2E)



Russian MS

(16 4A 64 43 63 51 64 63 2E)



Svallock

(16 4A 64 43 63 51 62 63 2E)



Romania

(16 4A 64 43 63 53 62 63 2E)



Turkish-F

(16 4A 64 43 63 54 62 63 2E)



Poland

(16 4A 64 43 63 4F 62 63 2E)



Japan
(16 4A 64 43 63 56 61 63 2E)



Ukraine
(16 4A 64 43 63 47 64 63 2E)

Case Conversion

By configuring the character case conversion function of the scanner, the English letters in the scanner's output data can be converted to different cases. For example, if the barcode content is 'aBC123' and the scanner is set to 'all lowercase,' the data received by the host will be 'abc123'.



Character conversion-no conversion *
(16 42 62 4C 64 4F 61 2E)



Character conversion-all uppercase
(16 42 62 4C 64 59 61 2E)



Character conversion-all lowercase
(16 42 62 4C 64 49 62 2E)



Character conversion-reverse case
(16 42 62 4C 64 53 62 2E)



USB Transfer Speed



USB transfer speed-high
(16 4F 64 4A 63 4A 63 2E)

USB-COM virtual serial port interface (CDC)



USB-COM virtual serial port *
(16 56 62 5A 63 58 61 67 2E)



TTL/RS232 serial port
(16 56 62 5A 63 41 62 67 2E)



Baud rate-9600 *
(16 56 62 43 64 53 64 63 2E)



USB transfer speed-normal *
(16 4F 64 4A 63 56 61 63 2E)



USB transfer speed-ultra high
(16 4F 64 4A 63 56 61 2E)



USB HID-POS
(16 56 62 5A 63 59 61 67 2E)



Baud rate-4800
(16 56 62 43 64 52 64 63 2E)



Baud rate-38400
(16 56 62 43 64 56 64 63 2E)



Baud rate -115200
(16 56 62 43 64 56 61 63 2E)



Serial port transmission speed-medium
(16 4A 64 47 65 56 61 63 2E)



Baud rate-19200
(16 56 62 43 64 55 64 63 2E)



Baud rate -57600
(16 56 62 43 64 57 64 63 2E)



Serial port transmission speed-low
(16 4A 64 47 65 4B 62 63 2E)



Serial port transmission speed-high
(16 4A 64 47 65 56 61 2E)



Reading Modes



Key-press timeout-unlimited
(16 55 61 5A 63 43 62 2E)



Key timeout-5S
(16 4D 64 5A 63 4B 62 63 2E)



Key-press timeout -15S
(16 4D 64 5A 63 49 64 63 2E)



Scan Mode-Manual Mode *
(16 56 62 42 65 4A 62 2E)



Key-press timeout-3S *
(16 4D 64 5A 63 41 62 63 2E)



Key timeout-10S
(16 4D 64 5A 63 4A 63 63 2E)



Key-press timeout-20S
(16 4D 64 5A 63 56 61 48 61)



Continuous Reading Mode

After setting, the scanner enters a continuous scanning state. Without triggering, the reading engine starts to read the code immediately. When the reading is successful, the information is output, or if the single reading time is over, the reading engine will wait for a settable period of time before automatically starting to read the code again.



Continuous reading mode
(16 56 62 42 65 5A 61 2E)

The same code reading interval means that after reading a barcode, the scanner will refuse to read the same barcode within the set time period. The barcode can only be read and output again after the duration has passed or the power is cycled.



Continuous same code delay-no delay
(16 4A 64 48 65 4C 61 2E)



Continuous same code delay -100ms
(16 4A 64 48 65 56 61 2E)



Continuous same code delay -200ms
(16 4A 64 48 65 46 62 2E)



Continuous same code delay -800ms *
(16 4A 64 48 65 4E 64 2E)



Continuous same code delay -1200ms
(16 4A 64 48 65 58 61 63 2E)



Continuous same code delay-2000ms
(16 4A 64 48 65 46 62 63 2E)



Continuous same code delay-no timeout
(16 52 61 48 65 43 62 2E)

Turn on the scanner to enter the barcode reading state. The scanner will stop reading the barcode once it is successfully read or the set timeout for one barcode reading is reached. When a new barcode appears, the scanner will re-enter the barcode reading state. In this mode, the reread delay can be used to prevent the same barcode from being read multiple times. Sensitivity settings can adjust the sensitivity of the sensing mode to light.



Autosense mode
(16 56 62 42 65 50 61 2E)

Code ID Prefix

You often need to identify the type of barcode currently scanned. We can use the Code ID prefix for this purpose. Please refer to 'Appendix-Code ID & AIM ID' for the corresponding barcode type of Code ID.



Disable ID-Close *
(16 57 61 46 62 52 61 2E)



Enable ID-Open
(16 57 61 46 62 42 62 2E)



AIM ID Prefix

AIM stands for Automatic Identification Manufacturers. The scanner can add this identification code before the barcode data after decoding, known as the AIM prefix. The prefix format is “]” + AIM prefix + digit “0”. For example, the AIM ID prefix for Code 128 is “]C0”.



Disable AIM ID *

(16 51 61 58 64 51 61 2E)



Enable AIM ID

(16 51 61 58 64 41 62 2E)



Set Customized Prefix

Add up to 10 characters for the customized prefix.



Set custom prefix

(16 42 65 52 65 54 64 2E)

~The first character of custom prefix

(16 49 64 46 63 XX XX XX 2E)

~The second character of the custom prefix

(16 49 64 47 63 XX XX XX 2E)

~3rd character of custom prefix

(16 49 64 48 63 XX XX XX 2E)

~4th character of custom prefix

(16 49 64 49 63 XX XX XX 2E)

~The 5th character of the custom prefix

(16 49 64 4A 63 XX XX XX 2E)

~The 6th character of custom prefix

(16 49 64 4B 63 XX XX XX 2E)

~7th character of custom prefix

(16 49 64 4C 63 XX XX XX 2E)

~The 8th character of custom prefix

(16 49 64 4D 63 XX XX XX 2E)

~9th character of custom prefix

(16 49 64 4E 63 XX XX XX 2E)

~10th character of custom prefix

(16 49 64 4F 63 XX XX XX 2E)



Clear custom prefix

(16 42 65 52 65 53 64 2E)



Set Customized Suffix

Add up to 10 characters for the customized suffix.



Set custom suffix

(16 42 65 52 65 57 64 2E)

~The first character of custom suffix

(16 49 64 50 63 XX XX XX 2E)

~Second character of custom suffix

(16 49 64 51 63 XX XX XX 2E)

~3rd character of custom suffix

(16 49 64 52 63 XX XX XX 2E)

~4th character of custom suffix

(16 49 64 53 63 XX XX XX 2E)

~The 5th character of custom suffix

(16 49 64 54 63 XX XX XX 2E)

~The 6th character of custom suffix

(16 49 64 55 63 XX XX XX 2E)

~7th character of custom suffix

(16 49 64 56 63 XX XX XX 2E)

~The 8th character of custom suffix

(16 49 64 57 63 XX XX XX 2E)

~The 9th character of custom suffix

(16 49 64 58 63 XX XX XX 2E)

~10th character of custom suffix

(16 49 64 59 63 XX XX XX 2E)



Clear custom suffix

(16 42 65 52 65 52 64 2E)



Start Character STX and End Character ETX Settings

The start character and end character act as markers to indicate the beginning and end of a complete data message. They must be the first and last content of the data, respectively, with no other data before or after them. This ensures that the message is clearly defined and can be accurately processed.



Start character-STX
(16 42 62 4B 64 4A 62 2E)



Start and end characters-STX+ETX
(16 42 62 4B 64 54 62 2E)



End-line feed (0x0A)
(16 4C 62 4B 64 55 63 2E)



Start Character-None *
(16 42 62 4B 64 50 61 2E)



End-ETX
(16 42 62 4B 64 5A 61 2E)



End-Carriage Return (0x0D) *
(16 4C 62 4B 64 47 62 2E)



End-Carriage Return and Line Feed
(0x0D0A)
(16 4C 62 4B 64 57 61 2E)



End-Tab HT (0x09)
(16 4C 62 4B 64 51 62 2E)



End-Carriage return and line feed
(0x0D0A0D0A)
(16 4C 62 4B 64 4B 63 2E)

Barcode Settings



Enable all barcode types
(16 47 62 59 61 58 61 2E)



Enable all 1D barcodes
(16 47 62 59 61 5A 61 2E)



End-Carriage Return (0x0D0D)
(16 4C 62 4B 64 41 63 2E)



End-None
(16 4C 62 4B 64 4D 61 2E)



Disable all barcode types
(16 47 62 59 61 48 62 2E)



Disable all 1D barcodes
(16 47 62 59 61 4A 62 2E)



Enable all 2D barcodes
(16 47 62 59 61 42 62 2E)



Enable UPC-A *
(16 51 61 59 61 42 62 2E)



Send UPC-A Check Digit *
(16 51 61 54 64 43 62 2E)



Send UPC-A 2 additional bits
(16 51 61 49 62 43 62 2E)



Send UPC-A 5 additional bits
(16 51 61 49 62 42 62 2E)



Disable all 2D barcodes
(16 47 62 59 61 4C 62 2E)



Disable UPC-A
(16 51 61 59 61 52 61 2E)



Don't send UPC-A check digit
(16 51 61 54 64 53 61 2E)



Don't send UPC-A 2 additional bits *
(16 51 61 49 62 53 61 2E)



Convert UPC-A to EAN-13
(16 51 61 54 64 5A 61 2E)



Enable UPC-E0 *
(16 51 61 59 61 56 61 2E)



Enable UPC-E1
(16 57 61 59 61 56 61 2E)



UPC-E Transmit Check Digit *
(16 51 61 54 64 42 62 2E)



Don't send UPC-A 5 additional bits
(16 51 61 49 62 52 61 2E)



Don't convert UPC-A to EAN-13 *
(16 51 61 54 64 50 61 2E)



Disable UPC-E0
(16 51 61 59 61 4C 61 2E)



Disable UPC-E1 *
(16 57 61 59 61 4C 61 2E)



UPC-E don't send check digit
(16 51 61 54 64 52 61 2E)



Enable UPC-E 2 additional bits
(16 51 61 49 62 43 62 2E)



Enable UPC-E 5 additional bits
(16 51 61 49 62 42 62 2E)



UPC-E-Convert to UPC-A
(16 51 61 54 64 41 62 2E)



Enable EAN/JAN-8 *
(16 51 61 59 61 5A 61 2E)



EAN/JAN-8-Transmit Check Digit *
(16 51 61 58 64 56 61 2E)



Disable UPC-E 2 additional bits *
(16 51 61 49 62 53 61 2E)



Disable UPC-E 5 additional bits *
(16 51 61 49 62 52 61 2E)



UPC-E- not converted to UPC-A *
(16 51 61 54 64 51 61 2E)



Disable EAN/JAN-8
(16 51 61 59 61 50 61 2E)



Enable EAN/JAN-8 2 additional bits
(16 51 61 49 62 43 62 2E)



Enable EAN/JAN-8 5 additional bits
(16 51 61 49 62 42 62 2E)



EAN/JAN-8-Convert to EAN-13
(16 51 61 54 64 58 61 2E)



Enable EAN/JAN -13 *
(16 51 61 59 61 57 61 2E)



EAN/JAN-8- don't send check digit
(16 51 61 58 64 4C 61 2E)



Disable EAN/JAN-8 2 additional bits *
(16 51 61 49 62 53 61 2E)



Disable EAN/JAN-8 5 additional bits *
(16 51 61 49 62 52 61 2E)



EAN/JAN-8-not converted to EAN-13 *
(16 51 61 54 64 4E 61 2E)



Disable EAN/JAN -13
(16 51 61 59 61 4D 61 2E)



EAN/JAN-13-Transmit Check Digit
(16 51 61 58 64 58 61 2E)



EAN/JAN-13 don't send check digit
(16 51 61 58 64 4E 61 2E)



Enable EAN/JAN-13 2 additional bits
(16 51 61 49 62 43 62 2E)



Disable EAN/JAN-13 2 additional bits *
(16 51 61 49 62 53 61 2E)



Enable EAN/JAN-13 5 additional bits
(16 51 61 49 62 42 62 2E)



Disable EAN/JAN-13 5 additional bits *
(16 51 61 49 62 52 61 2E)



EAN/JAN -13-Open ISBN conversion
(16 51 61 4A 62 43 62 2E)



EAN/JAN -13-Close ISBN conversion *
(16 51 61 4A 62 53 61 2E)



Transmit ISBN check character
(16 51 61 4A 62 41 62 2E)



Don't transmit ISBN check character *
(16 51 61 4A 62 51 61 2E)



Enable EAN/JAN -13 ISSN conversion
(16 52 61 56 63 43 62 2E)



Disable EAN/JAN -13 ISSN conversion *
(16 52 61 56 63 53 61 2E)



Enable ISSN
(16 51 61 54 64 58 61 2E)



Disable ISSN *
(16 51 61 54 64 4E 61 2E)



ISSN transmits check character
(16 52 61 56 63 41 62 2E)



ISSN don't transmit check characters *
(16 52 61 56 63 51 61 2E)



Enable Code 128 *
(16 51 61 58 61 59 61 2E)



Disable Code 128
(16 51 61 58 61 4F 61 2E)



~Code 128-Minimum length
(16 4E 64 49 62 XX XX XX 2E)



~Code 128-Maximum length
(16 4E 64 4A 62 XX XX XX 2E)



Enable GS1-128 *
(16 52 61 59 63 56 61 2E)



Disable GS1-128
(16 52 61 59 63 4C 61 2E)



~GS1-128-Minimum length
(16 4E 64 4B 62 XX XX XX 2E)



~GS1-128-Maximum length
(16 4E 64 4C 62 XX XX XX 2E)



ISBT 128-enable the connection function
(16 54 61 43 65 43 62 2E)



ISBT 128-disable connection function *
(16 54 61 43 65 53 61 2E)



Enable Code 39 *
(16 51 61 58 61 57 61 2E)



Code 39-Enable Mode43 verification
(16 51 61 59 61 59 61 2E)



Code 39-transmission check
(16 51 61 56 64 41 62 2E)



Send start and end character
(16 51 61 56 64 56 61 2E)



Code 39-enable Full ASCII
(16 51 61 59 61 43 62 2E)



Disable Code 39
(16 51 61 58 61 4D 61 2E)



Code 39-disable Check *
(16 51 61 59 61 4F 61 2E)



Code 39-don't send verification *
(16 51 61 56 64 51 61 2E)



Don't send start and end characters *
(16 51 61 56 64 4C 61 2E)



Code 39-disable Full ASCII *
(16 51 61 59 61 53 61 2E)



~Code 39-Minimum length
(16 4E 64 4D 62 XX XX XX 2E)



Enable Code 32
(16 51 61 59 61 41 62 2E)



Code 32-send verification *
(16 57 61 59 61 57 61 2E)



Code 32-Add A before the barcode
(16 51 61 56 64 58 61 2E)



Failed to open Code 32 to read *
(16 51 61 5A 61 43 62 2E)



~Code 39-Maximum Length
(16 4E 64 4E 62 XX XX XX 2E)



Disable Code 32 *
(16 51 61 59 61 51 61 2E)



Code 32-don't send verification
(16 57 61 59 61 4D 61 2E)



Code 32- Add A at closing the barcode *
(16 51 61 56 64 4E 61 2E)



Enable Code 93 *
(16 51 61 58 61 58 61 2E)



~Code 93-Minimum Length
(16 4E 64 45 63 XX XX XX 2E)



Enable Code 11
(16 51 61 57 61 59 61 2E)



Code 11-One-bit check *
(16 51 61 59 64 51 61 2E)



Close Code 32 failed to read
(16 51 61 5A 61 53 61 2E)



Disable Code 93
(16 51 61 58 61 4E 61 2E)



~Code 93-Maximum Length
(16 4E 64 46 63 XX XX XX 2E)



Disable Code 11 *
(16 51 61 57 61 4F 61 2E)



Code 11-Two Digit Check
(16 51 61 59 64 41 62 2E)



Code 11-Transmission Check *
(16 51 61 56 64 59 61 2E)



~Code 11-Minimum Length
(16 4E 64 4F 62 XX XX XX 2E)



Enable Codabar *
(16 51 61 58 61 5A 61 2E)



Codabar-no parity *
(16 51 61 41 62 4C 61 2E)



Codabar-Transmission Check
(16 51 61 59 64 42 62 2E)



Code 11-Do not send verification
(16 51 61 56 64 4F 61 2E)



~Code 11-Maximum Length
(16 4E 64 50 62 XX XX XX 2E)



Disable Codabar
(16 51 61 58 61 50 61 2E)



Codabar-Mod 16 verification
(16 51 61 41 62 56 61 2E)



Send start and stop characters
(16 51 61 56 64 43 62 2E)



Codabar- ABCD/ABCD *
(16 57 61 4D 62 53 61 2E)



~Codabar-minimum length
(16 4E 64 47 63 XX XX XX 2E)



Enable Interleaved 2 of 5 *
(16 51 61 58 61 41 62 2E)



Codabar-Do not send check *
(16 51 61 59 64 52 61 2E)



Don't send start / stop characters *
(16 51 61 56 64 53 61 2E)



Codabar- ABCD/TN*E
(16 57 61 4D 62 43 62 2E)



~Codabar-Maximum length
(16 4E 64 48 63 XX XX XX 2E)



Disable Interleaved 2 of 5
(16 51 61 58 61 51 61 2E)



Turn off verification *

(16 51 61 5A 61 4C 61 2E)



Transmission Mod 10 Verification

(16 51 61 56 64 5A 61 2E)



~Interleaved 2 of 5 -Minimum length

(16 4E 64 53 62 XX XX XX 2E)



Enable Matrix 2 of 5 *

(16 51 61 57 61 41 62 2E)



Matrix 2 of 5-enable verification

(16 41 62 42 62 42 62 2E)



Turn on Mod10 verification

(16 51 61 5A 61 56 61 2E)



Don't transmit Mod 10 verification *

(16 51 61 56 64 50 61 2E)



~Interleaved 2 of 5 -Maximum length

(16 4E 64 54 62 XX XX XX 2E)



Disable Matrix 2 of 5

(16 51 61 57 61 51 61 2E)



Enable verification, and don't send
(16 41 62 42 62 4C 62 2E)



~Matrix 2 of 5 -Maximum length
(16 4E 64 5A 62 XX XX XX 2E)



Disable Industrial 2 of 5
(16 51 61 58 61 4C 61 2E)



~Industrial 2 of 5 -Maximum length
(16 4E 64 56 62 XX XX XX 2E)



Matrix 2 of 5-disable verification *
(16 41 62 42 62 52 61 2E)



~Matrix 2 of 5 -Minimum length
(16 4E 64 59 62 XX XX XX 2E)



Enable Industrial 2 of 5 *
(16 51 61 58 61 56 61 2E)



~Industrial 2 of 5 -Minimum length
(16 4E 64 55 62 XX XX XX 2E)



Enable Standard 2 of 5
(16 51 61 57 61 5A 61 2E)



Disable Standard 2 of 5 *
(16 51 61 57 61 50 61 2E)



~Standard 2 of 5 -Maximum length
(16 4E 64 58 62 XX XX XX 2E)



Disable MSI *
(16 51 61 59 61 4E 61 2E)



MSI one bit Mod 10 check
(16 41 62 44 62 4A 62 2E)



MSI- Mod 11/10 check
(16 41 62 44 62 5A 61 2E)



~Standard 2 of 5 -Minimum length
(16 4E 64 57 62 XX XX XX 2E)



Enable MSI
(16 51 61 59 61 58 61 2E)



MSI-no calibration *
(16 41 62 44 62 50 61 2E)



MSI two-digit Mod 10 check
(16 41 62 44 62 54 62 2E)



MSI-Do not send check digit *
(16 51 61 56 64 4D 61 2E)



~MSI -Maximum length
(16 4E 64 44 63 XX XX XX 2E)



Disable Telepen *
(16 51 61 57 61 53 61 2E)



Telepen-letter type *
(16 51 61 57 61 52 62 2E)



MSI-Transmit Check Digit
(16 51 61 56 64 57 61 2E)



~MSI -Minimum length
(16 4E 64 43 63 XX XX XX 2E)



Enable Telepen
(16 51 61 57 61 43 62 2E)



Telepen-Digital Type
(16 51 61 57 61 42 61 2E)



~Telepen-Minimum length
(16 4E 64 51 62 XX XX XX 2E)



~Telepen-Maximum length
(16 4E 64 52 62 XX XX XX 2E)



Disable Febraban (ITF25 type) *
(16 57 61 4E 62 4C 61 2E)



Disable Febraban (Code128 type) *
(16 57 61 4E 62 4D 61 2E)



Febraban-disable verification *
(16 57 61 4E 62 4E 61 2E)



Disable GS1 DataBar 14
(16 51 61 41 62 4F 61 2E)



Enable Febraban (ITF25 type)
(16 57 61 4E 62 56 61 2E)



Enable Febraban (Code128 type)
(16 57 61 4E 62 57 61 2E)



Febraban-enable verification
(16 57 61 4E 62 58 61 2E)



Enable GS1 DataBar 14 *
(16 51 61 41 62 59 61 2E)



GS1 DataBar Limited-closed
(16 51 61 41 62 50 61 2E)



GS1 DataBar Maximum Length
(16 4E 64 4A 63 XX XX XX 2E)



Disable QR Code
(16 51 61 43 62 4E 61 2E)



QR Code-Normal + Reverse Reading
(16 51 61 43 62 59 61 2E)



GS1 DataBar Limited-Open *
(16 51 61 41 62 5A 61 2E)



~GS1 DataBar Minimum Length
(16 4E 64 49 63 XX XX XX 2E)



Enable QR Code *
(16 51 61 43 62 58 61 2E)



QR Code-Read-only normal phase *
(16 51 61 43 62 4F 61 2E)



The default reading digits of QR barcode is 1-7089, and the scanner can be configured to only read QR barcodes with a length between the minimum length (1-7089) and the maximum length (1-7089).

Reading minimum length = minimum length high digit * 256 + minimum length low digit

Reading maximum length = maximum length high digit * 256 + maximum length low digit



~QR Code-Minimum length (low byte)
(16 4E 64 59 64 XX XX XX 2E)



~QR Code-Minimum length (high byte)
(16 4E 64 5A 64 XX XX XX 2E)



~QR Code-Maximum length (low byte)
(16 4E 64 41 65 XX XX XX 2E)



~QR Code-Maximum length (high byte)
(16 4E 64 42 65 XX XX XX 2E)



Enable Micro QR Code *
(16 51 61 43 62 41 62 2E)



Disable Micro QR Code
(16 51 61 43 62 51 61 2E)



Micro QR Code-Read only normal phase *
(16 51 61 43 62 52 61 2E)



Micro QR Code-Normal + Reverse Reading
(16 51 61 43 62 42 62 2E)



Disable Data Matrix
(16 51 61 42 62 4F 61 2E)



Data Matrix no read rectangular codes *
(16 51 61 42 62 4D 61 2E)



Data Matrix-Normal + reverse phase
(16 51 61 42 62 58 61 2E)



~Data Matrix -Minimum length (high byte)
(16 4E 64 56 64 XX XX XX 2E)



Enable Data Matrix *
(16 51 61 42 62 59 61 2E)



Data Matrix reading rectangular codes
(16 51 61 42 62 57 61 2E)



Data Matrix-Read-only normal phase *
(16 51 61 42 62 4E 61 2E)



~Data Matrix -Minimum length (low byte)
(16 4E 64 55 64 XX XX XX 2E)



~Data Matrix -Maximum length (low byte)
(16 4E 64 57 64 XX XX XX 2E)



Enable PDF 417 *

(16 51 61 57 61 56 61 2E)



~PDF 417 -Minimum length (low byte)

(16 4E 64 47 64 XX XX XX 2E)



~PDF 417 -Maximum length (low byte)

(16 4E 64 49 64 XX XX XX 2E)



Enable Micro PDF 417

(16 51 61 41 62 43 62 2E)



~Data Matrix -Maximum length (high byte)

(16 4E 64 58 64 XX XX XX 2E)



Disable PDF 417

(16 51 61 57 61 4C 61 2E)



~PDF 417 -Minimum length (high byte)

(16 4E 64 48 64 XX XX XX 2E)



~PDF 417 -Maximum length (high byte)

(16 4E 64 4A 64 XX XX XX 2E)



Disable Micro PDF 417 *

(16 51 61 41 62 53 61 2E)



~Micro PDF 417 -Min length (low byte)
(16 4E 64 4B 64 XX XX XX 2E)



~Micro PDF 417 -Min length (high byte)
(16 4E 64 4C 64 XX XX XX 2E)



~Micro PDF 417 -Max length (low byte)
(16 4E 64 4D 64 XX XX XX 2E)



~Micro PDF 417 -Max length (high byte)
(16 4E 64 4E 64 XX XX XX 2E)



Enable MaxiCode
(16 51 61 43 62 5A 61 2E)



Disable MaxiCode *
(16 51 61 43 62 50 61 2E)



~MaxiCode -Minimum length
(16 4E 64 53 64 XX XX XX 2E)



~MaxiCode -Maximum length
(16 4E 64 54 64 XX XX XX 2E)



Enable Aztec
(16 51 61 43 62 56 61 2E)



Disable Aztec *
(16 51 61 43 62 4C 61 2E)



Aztec-read-only normal phase *
(16 51 61 43 62 4D 61 2E)



Aztec-normal + reverse phase reading
(16 51 61 43 62 57 61 2E)



~Aztec-minimum length (low byte)
(16 4E 64 4F 64 XX XX XX 2E)



~Aztec-minimum length (high byte)
(16 4E 64 50 64 XX XX XX 2E)



~Aztec-Maximum length (low byte)
(16 4E 64 51 64 XX XX XX 2E)



~Aztec-Maximum length (high byte)
(16 4E 64 52 64 XX XX XX 2E)



Enable HanXin
(16 53 61 52 64 57 61 2E)



Disable HanXin *
(16 53 61 52 64 4D 61 2E)



~HanXin-minimum length (low byte)
(16 4E 64 43 65 XX XX XX 2E)



~HanXin-minimum length (high byte)
(16 4E 64 44 65 XX XX XX 2E)



~HanXin-Maximum length (low byte)
(16 4E 64 45 65 XX XX XX 2E)



~HanXin-Maximum length (high byte)
(16 4E 64 46 65 XX XX XX 2E)



Enable China Post
(16 51 61 5A 61 42 62 2E)



Disable China Post *
(16 51 61 5A 61 52 61 2E)



~China Post -Minimum length
(16 4E 64 4F 63 XX XX XX 2E)



~China Post -Maximum Length
(16 4E 64 50 63 XX XX XX 2E)



Enable GS1 Composte Code
(16 52 61 55 63 42 62 2E)



Disable GS1 Composte Code *
(16 52 61 55 63 52 61 2E)



~GS1 Code-Minimum length (low byte)
(16 4E 64 4B 63 XX XX XX 2E)



~GS1 Code-Minimum length (high byte)
(16 4E 64 4C 63 XX XX XX 2E)



~GS1 Code-Maximum length (low byte)
(16 4E 64 4D 63 XX XX XX 2E)



~GS1 Code-Maximum length (high byte)
(16 4E 64 4E 63 XX XX XX 2E)



Enter/Exit Data Code Setting Mode

To configure the prefix, suffix, code length, or other variable values, you must first scan the 'enter/exit data code setting mode' barcode to enter the data code setting mode. In this mode, only the variable length configuration barcodes marked with the '~' symbol are valid. To set other configuration barcodes, you must exit the data code setting mode first.



Enter/exit data code setting mode
(16 42 65 52 65 47 65 2E)



Appendices

Appendix - Data Code

The data code is utilized to configure the prefix and suffix, code length, or other variable values. This code, it must be used in conjunction with the "Enter/Exit Data Code Setting Mode".



0



2



4



6



8



1



3



5



7



9



Appendix - Code ID & AIM ID

Item	Barcode type	Code ID	AIM ID	Description
1	Code 128	A	]C0	
2	GS1 128	B	]C1	
3	EAN-8	C	]E4	
4	EAN-8 with Add-on	C	]E3	
5	EAN-13	D	]E0	
6	EAN-13 with Add-on	D	]E3	
7	UPC-E	E	]E0	
8	UPC-E with Add-on	E	]E3	
9	UPC-A	F	]E0	
10	UPC-A with Add-on	F	]E3	
11	UPC-E1	E	]X0	
12	ISBN	d	]E0	
13	Code11	1	]Hm	m: 0,1,3
14	Code39 Base32	f	]X0	
15	Interleaved 2 of 5	G	]Im	m: 0,1,3
16	Industrial 2 of 5	h	]S0	
17	Standard 2 of 5	H	]R0	
18	Code 39	I	]Am	m: 0,1,3,4,5,7
19	Codabar	J	]Fm	m: 0,2,4
20	MSI Plessey	K	]Mm	m: 0,1,2,3,5,6,7
21	Code 93	L	]G0	
22	GS1 Databar Omnidirectional	M	]e0	
23	GS1 Databar Limited	[	]e0	
24	GS1 Databar Expanded	]	]e0	
25	HongKong 2 of 5(China Post)	P	]X9	
26	Matrix 2 of 5	Q	]X0	
27	PDF417	N	]Lm	m: 0,1,2
28	Micro PDF417	O	]Lm	m: 0,1,2,3,4,5
29	Hanxin	S	]XH	
30	AztecCode	T	]zm	m: 0-9,A-C
31	QR code	U	]Qm	m: 0-6
32	Micro QR	U	]Qm	m: 0-6
33	Data Matrix	V	]dm	m: 0-6
34	Maxi Code	W	]Um	m: 0-3
35	GS1 Composite Code	M / [/] / ...	]e0	
36	Telepen	8	]Bm	m: 0,1,2,4

Note: The Code ID of GS1 Composite Code depends on the type of composite code.



Appendix - Example for Use of Variable Parameters

Here's an example for setting the minimum and maximum length (10, 30) of Code 128:

The "XX XX XX" in the instruction represents the ASCII code of the specific value of the variable parameter, which is fixed to 3 values.

Finally, the instructions that need to be set correspond to:

- Minimum length (010): 30 31 30
- Maximum length (030): 30 33 30

This should help you configure the length settings for Code 128.

~ Code128 minimum length (10)	16 4E 64 49 62 30 31 30 2E
~ Code 128 maximum length (30)	16 4E 64 4A 62 30 33 30 2E



Appendix - Example for Prefix and Suffix Settings

Set prefix of XY to all barcode types, The three-digit decimal value for the character XY is 088,089.

Step 1: Scan "Enter/Exit Data Code Setting Mode" (the buzzer will sound 3 times).



Enter/exit data code setting mode

Step 2: Scan the "~set custom prefix".



~Set custom prefix

Step 3: Scan "0", "8" and "8" of "Appendix-Data Code" in turn to set the code.



0



8



8

Step 4: Scan the "~set custom prefix" setting code.



~Set custom prefix

Step 5: Scan "0", "8" and "9" of "Appendix-Data Code" in turn to set the code.



0



8



9

Step 5: Scan the "Enter/Exit Data Code Setting Mode" (the buzzer will sound 3 times).



Enter/exit data code setting mode

Note: You can set up to 10 custom prefixes. Repeat the second and third steps to set multiple prefixes. After each prefix is set, it will automatically switch to the next prefix setting (1-10 from left to right). After setting the 10th prefix, it will automatically return to the first prefix setting.