

*Speed is Power*  
**M3 MOBILE**

# Ring Scanner

## User Manual



## Revision

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Release date of version 1.0: May 2020

- Initial distribution

Release date of version 1.1: May 2020

- Add Other Settings

Release date of version 1.2: June 2020

- Update of wired type ring scanner specifications

Release date of version 1.3: July 2020

- Update of wired type ring scanner specifications

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# 1 BLUETOOTH TYPE RING SCANNER

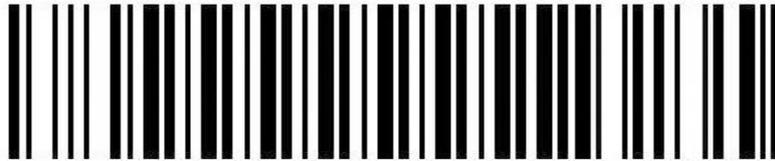
## 1.1 Specifications

Product name	Wearable Ring Scanner (BT Type)
Dimensions	Length:55.0mm, Width: 39.2mm, Height:51.2mm
Weight	65g
Electrical	Power: DC5V Typical: 550mA DC5V
CPU	32bit ARM CPU
Data storage	100KB for offline mode: 6000 15 bytes barcodes(Other flash is optional).
Working mode	Bluetooth Class 2 V4.1 EDR
Communication	Class 3 Bluetooth HID, SPP with 20M distance
Scan mode	Level, Presentation Mode, Host, Auto Aim, Auto Aim with Illumination
Ambient illumination	0 ~ 107,639 lux
Scanner performance	Sensor Type: 1280 (horizontal) × 800 (vertical) pixels Light: 610nm LED Scanner performance 660nm red LED Scanner Angle: ±60°,±60°,±360°(skew, pitch, Roll) Field of view: Horizontal: 42° , Vertical: 28° Contrast: ≥20%
Temperature	Operating: -20°C to 60°C (-4°F to 140°F); Storage: -40°C to 70°C (-40°F to 158°F)
Humidity	5% to 90% (non-condensing)

<p>Barcode Type</p>	<p>UPC-A, UPC-E, UPC-E1, EAN-8/JAN 8, EAN-13/JAN 13, Bookland EAN, Transmit UPC-A                  Check Digit, Transmit UPC-E Check Digit, Transmit UPC-E1 Check Digit, Convert UPC-E to A,                  Convert UPC-E1 to A, EAN-8/JAN-8 Extend, UCC Coupon Extended Code, ISSN EAN, Code 128, GS1-128 (formerly UCC/EAN-128), ISBT 128, ISBT Concatenation, Check ISBT Table, Code 39, Trioptic Code 39, Convert Code 39 to Code 32 (Italian Pharmacy Code), Code 32 Prefix, Code 39 Check Digit Verification, Transmit Code 39 Check Digit, Code 39 Full ASCII Conversion, Buffer Code 39, Code 93, Code 11, Code 11 Check Digit Verification, Transmit Code 11 Check Digit(s), Interleaved 2 of 5 (ITF), I 2 of 5 Check Digit Verification, Transmit I 2 of 5 Check Digit, Convert I 2 of 5 to EAN 13, Discrete 2 of 5, Codabar, CLSI Editing, NOTIS Barcode Type Editing, MSI, Transmit MSI Check Digit, Chinese 2 of 5, Matrix 2 of 5, Matrix 2 of 5 Check Digit, Transmit Matrix 2 of 5 Check Digit, Korean 3 of 5, US Postnet, US Planet, Transmit US Postal Check Digit, UK Postal, Transmit UK Postal Check Digit, Japan Postal, Australia Post, Netherlands KIX Code, USPS 4CB/One Code/Intelligent Mail, UPU FICS Postal, GS1 DataBar (GS1 DataBar Omnidirectional, GS1 DataBar Truncated, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional), GS1 DataBar Limited, GS1 DataBar Expanded (GS1 DataBar Expanded, GS1 DataBar Expanded Stacked), Convert GS1 DataBar to UPC/EAN, Composite CC-C, Composite CC-A/B, Composite TLC-39, GS1-128 Emulation Mode for UCC/EAN Composite Codes, PDF417, MicroPDF417, Code 128 Emulation, Data Matrix, Maxicode, QR Code, MicroQR, Aztec, Han Xin, Transmit Macro PDF Control Header</p>
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## 1.2 HID Mode for Android

1. Turn on the barcode reader, and read below barcodes sequence, the blue LED will flash rapidly.



**Bluetooth HID Mode**



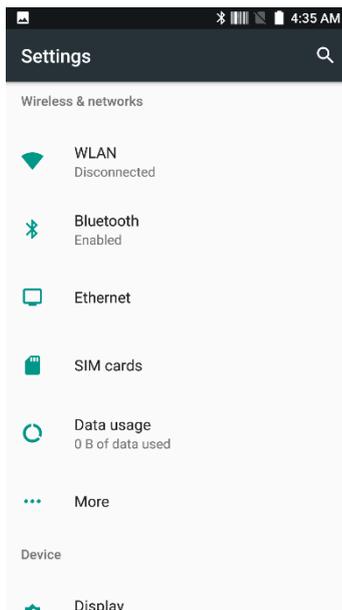
**Bluetooth Pairing Mode**



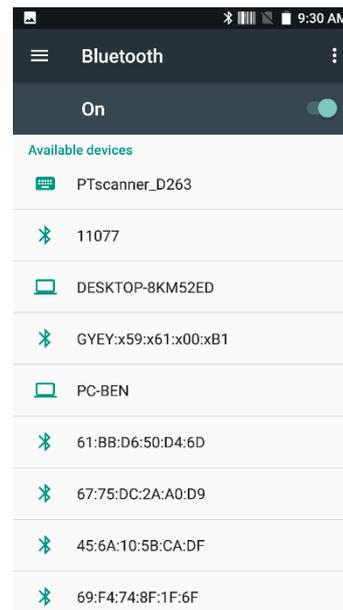
**Bluetooth Output**

2. Enable the Bluetooth of Android device to pair with the barcode reader.  
Enable Bluetooth in "The 1st" picture, and the Android device will be searching automatically, shown in "The 2nd" picture.

*BT type Ring Scanner*

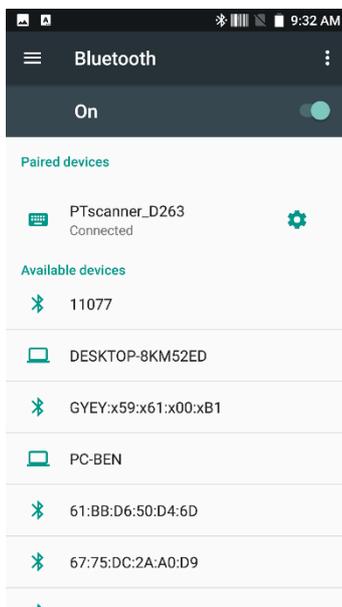


The 1st

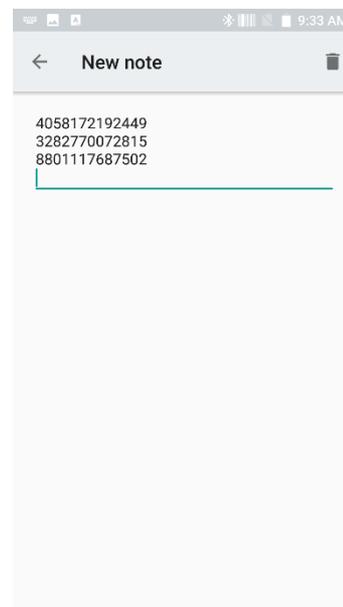


The 2nd

3. After the search is completed, click scanner’s name (PTscanner) to connect, then “Bluetooth keyboard connected” will display on the soft keyboard, and the blue LED on the scanner will be off, the connection is successful, shown in “The 3rd” picture. Now, you can use it in Notes/office files or other cursor blinking position, shown in “The 4th” picture.



The 3rd



The 4th

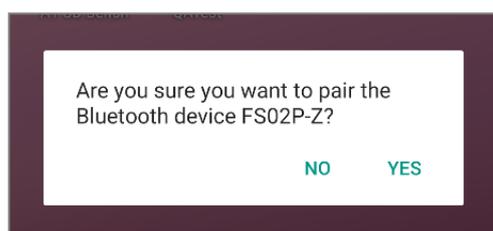
### 1.3 SPP Mode for Android

Due to some Android device cannot support Bluetooth HID protocol very well. It cannot connect Bluetooth scanner with HID mode. In general, Android support SPP protocol very well.

*\*Note: The Ring Scanner Application Manual can be found in the M3 Android Application Manual, which can be downloaded from the ITC page(<http://itc.m3mobile.net/>) or M3 website(<http://www.m3mobile.net/>). SDK manual also exists separately, so please refer to it.*

1. Please download the M3 Ring Scanner application to android device from our website, or get it from our sales, then install Ring Scanner.apk to your smartphone and run it.
2. There are two main ways to pair Bluetooth in SPP mode. The first is the pairing method using NFC, and the second is the pairing method through common.

#### 2-1. Bluetooth Pairing – NFC



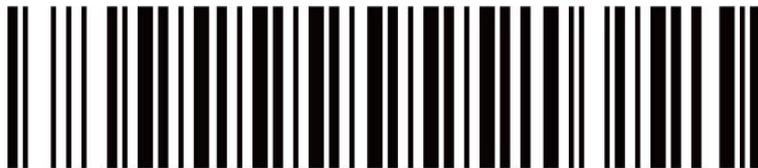
After installing the M3 Ring Scanner app, bring the ring scanner device to the back of the device and an NFC pairing dialogue appears. (Password on first connection: 1234)

## 2-2. Bluetooth Pairing – General

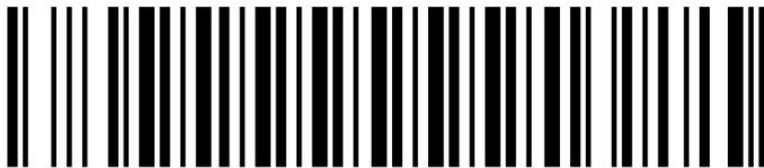
Turn on the barcode reader, and read below barcodes sequence, the blue LED will flash slowly.



**Bluetooth SPP Mode**



**Bluetooth Pairing Mode**



**Bluetooth Output**

After the connection is successful, the blue LED on the scanner will be off.

## 2 WIRED TYPE RING SCANNER

### 2.1 Specifications



Product name	Wearable Ring Scanner (Wired Type)
Dimensions	Length:55.0mm, Width: 39.2mm, Height:51.2mm
Weight	65g
Electrical	Power: DC5V Typical: 300mA DC5V (No Battery in wired type ring scanner)
CPU	32bit ARM CPU
Data storage	100KB for offline mode: 6000 15 bytes barcodes (Other flash is optional).
Working mode	OTG cable
Scan mode	Level, Presentation Mode, Host, Auto Aim, Auto Aim with Illumination
Ambient illumination	0 ~ 107,639 lux
Scanner performance	Sensor Type: 1280 (horizontal) × 800 (vertical) pixels Light: 610nm LED Scanner performance 660nm red LED Scanner Angle: ±60°,±60°,±360°(skew, pitch, Roll) Field of view: Horizontal: 42° , Vertical: 28° Contrast: ≥20%

Barcode Type	<p>UPC-A, UPC-E, UPC-E1, EAN-8/JAN 8, EAN-13/JAN 13, Bookland EAN, Transmit UPC-A</p> <p>Check Digit, Transmit UPC-E Check Digit, Transmit UPC-E1 Check Digit, Convert UPC-E to A,</p> <p>Convert UPC-E1 to A, EAN-8/JAN-8 Extend, UCC Coupon Extended Code, ISSN EAN, Code 128, GS1-128 (formerly UCC/EAN-128), ISBT 128, ISBT Concatenation, Check ISBT Table,</p> <p>Code 39, Trioptic Code 39, Convert Code 39 to Code 32 (Italian Pharmacy Code), Code 32</p> <p>Prefix, Code 39 Check Digit Verification, Transmit Code 39 Check Digit, Code 39 Full ASCII</p> <p>Conversion, Buffer Code 39, Code 93, Code 11, Code 11 Check Digit Verification, Transmit</p> <p>Code 11 Check Digit(s), Interleaved 2 of 5 (ITF), I 2 of 5 Check Digit Verification, Transmit I 2 of 5 Check Digit, Convert I 2 of 5 to EAN 13, Discrete 2 of 5, Codabar, CLSI Editing, NOTIS</p> <p>Barcode Type</p> <p>Editing, MSI, Transmit MSI Check Digit, Chinese 2 of 5, Matrix 2 of 5, Matrix 2 of 5 Check</p> <p>Digit, Transmit Matrix 2 of 5 Check Digit, Korean 3 of 5, US Postnet, US Planet, Transmit US</p>
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	<p>Postal Check Digit, UK Postal, Transmit UK Postal Check Digit, Japan Postal, Australia Post,</p> <p>Netherlands KIX Code, USPS 4CB/One Code/Intelligent Mail, UPU FICS Postal, GS1 DataBar</p> <p>(GS1 DataBar Omnidirectional, GS1 DataBar Truncated, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional), GS1 DataBar Limited, GS1 DataBar Expanded (GS1 DataBar Expanded, GS1 DataBar Expanded Stacked), Convert GS1 DataBar to UPC/EAN, Composite CC-C, Composite CC-A/B, Composite TLC-39, GS1-128 Emulation Mode for UCC/EAN Composite Codes,</p> <p>PDF417, MicroPDF417, Code 128 Emulation, Data Matrix, Maxicode, QR Code, MicroQR,</p> <p>Aztec, Han Xin, Transmit Macro PDF Control Header</p>
Decoding depth &	Code 39; 84mm -224mm (4mil);
Temperature	<p>Operating: -30°C to 60°C (-22°F to 140°F);</p> <p>Storage: -40°C to 70°C (-40°F to 158°F)</p>
Humidity	5% to 90% (non-condensing)

## 2.2 Simple operate user manual

The wired one barcode reader is much easier than that of wireless(BT) one :

1: Insert the scanner's Type-C interface into the wearable sled as shown in the picture below.



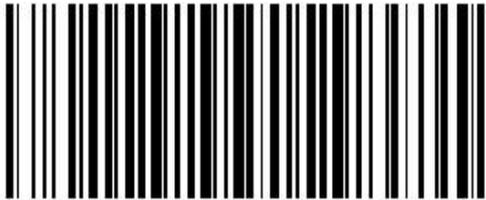
2: After connecting the wearable sled to the scanner, press the right button of the scanner to emit the scanner startup sound.

3: Open the place where the barcode needs to be entered on the mobile device.

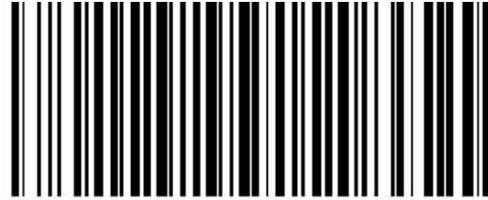
4: Scan the barcode, and the scanned data will be scanned on the mobile device.

**(The scanner will vibrate and the buzzer will sound once, and the green indicator light on the top of the scanner will blink once, indicating that the barcode scanning was successful. )**

### 3 BUZZER VOLUME SETTING



**Beep Off**



**Beep High**

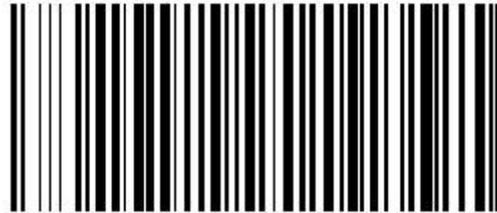


**Beep Middle**

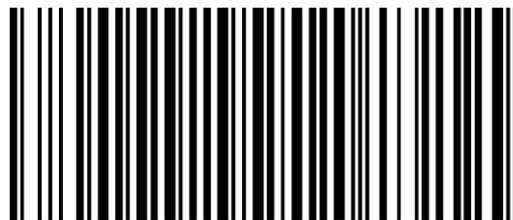


**Beep Low**

## 4 OTHER SETTINGS



**Restore Default Settings**



**Bluetooth Initialization**

**\* To initialize the factory, read the barcodes "Set factory defaults" and "Borate 115,200" in order.**



**Set Factory Defaults**



**Baud Rate 115,200  
(0Bh)**

## 5 BARCODE SETTINGS

The barcode scanner can read different type of barcode, please scan the corresponding barcode to set. \* is the default setting.

**\* Some of the barcodes cannot use using "Enable all symbologies".**

Because that barcodes are composite type. If you want to use these barcodes, then you may have to select Disable composite types one by one. And next, you must select again barcodes type that you want to use.

The settings for the composite type are shown in the next chapter, 5. composite, so please refer to this. If you use the composite type, the bar code performance may be lowered, so please refer to it and enable the bar code one by one if possible.

**\* How to Activate EAN13 type in WR02(SE2707)**

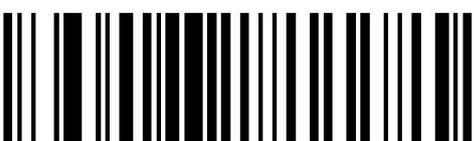
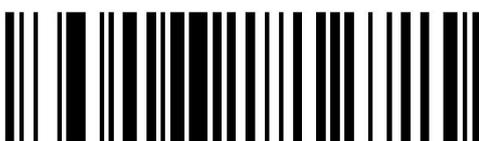
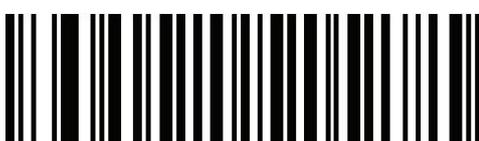
The scanning head of WR02(SE2707) will conflict with CC-A / B type barcode if all the barcode types EAN13 are opened. You need to close this below barcode type to read the EAN13 type barcode, so it is recommended that customers do not open all types of barcodes because different types of barcode There is a conflict, and it also affects the decoding performance. Customers can turn on that type of barcode if they need it. (The scanning head of WR03(SE4710) is normal.)

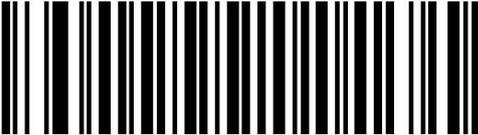
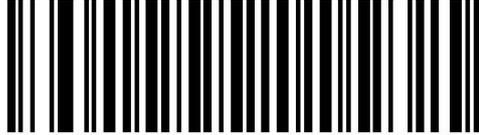
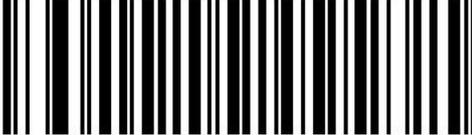
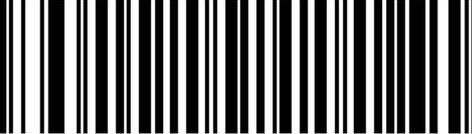
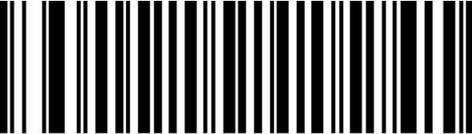
**Composite CC-A/B**



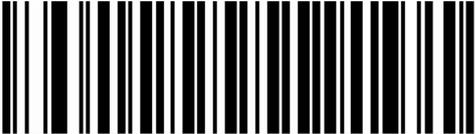
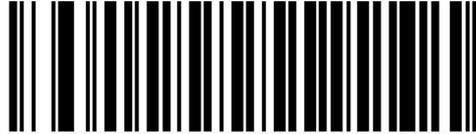
**\*Disable**

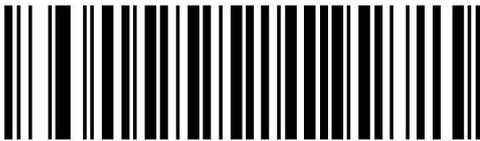
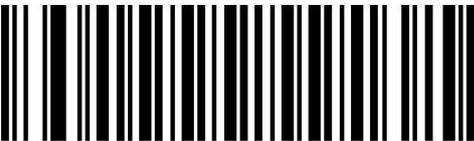
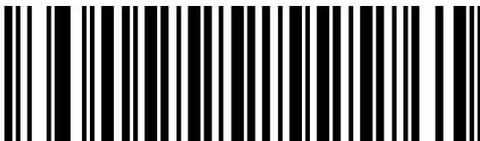
Global Setting			
Enable all symbologies		Disable all symbologies	
1D Symbologies			
UPC-A			
*Enable		Disable	
UPC-E			
*Enable		Disable	
UPC-E1			
Enable		*Disable	
EAN-8/JAN-8			
*Enable		Disable	
EAN-13/JAN-13			
*Enable		Disable	

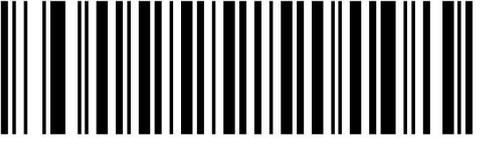
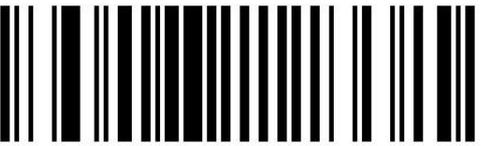
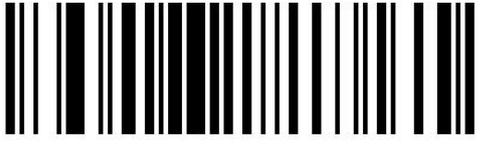
<b>Bookland EAN</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>ISSN EAN</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Code 128</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>GS1-128(formerly UCC/EAN-128)</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>ISBT 128</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>Check ISBT Table</b>	
<b>*Enable</b>	<b>Disable</b>
	

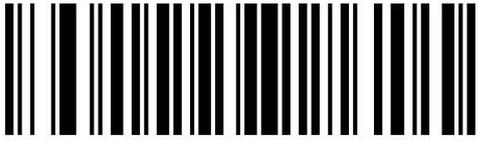
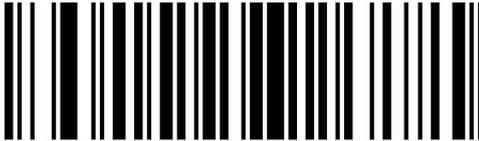
<b>Code 128 Reduced Quiet Zone</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Code 39</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>Trioptic Code 39</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Convert Code 39 to Code 32</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Code 32 Prefix</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Code 39 Check Digit Verification</b>	
<b>Enable</b>	<b>*Disable</b>
	

<b>Code 39 Full ASCII</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Code 39 Reduced Quiet Zone</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Code 93</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>Code 11</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Interleaved 2 of 5(ITF)</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>I 2 of 5 Reduced Quiet Zone</b>	
<b>Enable</b>	<b>*Disable</b>
	

<b>Discrete 2 of 5(DTF)</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Codabar(NW-7)</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>CLSI Editing</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>NOTIS Editing</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>MSI</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Chinese 2 of 5</b>	
<b>Enable</b>	<b>*Disable</b>
	

<b>Matrix 2 of 5</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>GS1 DataBar-14</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>GS1 DataBar Limited</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>GS1 DataBar Expanded</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>Convert GS1 DataBar to UPC/EAN/JAN</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Composite CC-C</b>	
<b>Enable</b>	<b>*Disable</b>
	

<b>Composite CC-A/B</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Composite TLC-39</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>GS1-128 Emulation Mode for UCC/EAN Composite Codes</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>2D Symbologies</b>	
<b>PDF417</b>	
<b>*Enable</b>	<b>Disable</b>
	
<b>MicroPDF417</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>Code 128 Emulation</b>	
<b>Enable</b>	<b>*Disable</b>

			
<b>Data Matrix</b>			
<b>*Enable</b>		<b>Disable</b>	
			
<b>Maxicode</b>			
<b>Enable</b>		<b>*Disable</b>	
			
<b>QR Code</b>			
<b>*Enable</b>		<b>Disable</b>	
			
<b>Micro QR</b>			
<b>*Enable</b>		<b>Disable</b>	
			
<b>Aztec</b>			
<b>*Enable</b>		<b>Disable</b>	
			
<b>HanXin</b>			
<b>Enable</b>		<b>*Disable</b>	

 	
<b>Postal Codes</b>	
<b>US Postnet</b>	
<b>Enable</b>	<b>*Disable</b>
 	
<b>US Planet</b>	
<b>Enable</b>	<b>*Disable</b>
 	
<b>UK Postal</b>	
<b>Enable</b>	<b>*Disable</b>
 	
<b>Japan Postal</b>	
<b>Enable</b>	<b>*Disable</b>
 	
<b>Australia Post</b>	
<b>Enable</b>	<b>*Disable</b>
 	
<b>Netherlands KIX Code</b>	

<b>Enable</b>	<b>*Disable</b>
	
<b>USPS 4CB/One Code/Intelligent Mail</b>	
<b>Enable</b>	<b>*Disable</b>
	
<b>UPU FICS Postal</b>	
<b>Enable</b>	<b>*Disable</b>
	

## 6 COMPOSITE TYPE

### 6.1 Composite CC-C

Parameter # 341

SSI # F0h 55h

Scan one of the following bar codes to enable or disable Composite bar codes of type CC-C.



Enable CC-C

(1)



\*Disable CC-C

(0)

### 6.2 Composite CC-A/B

Parameter # 342

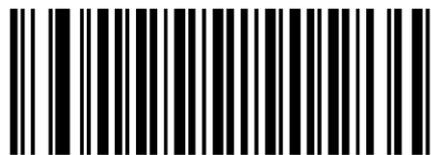
SSI # F0h 56h

Scan one of the following bar codes to enable or disable Composite bar codes of type CC-A/B.



Enable CC-A/B

(1)



\*Disable CC-A/B

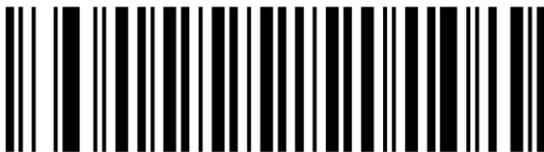
(0)

### 6.3 Composite TLC-39

Parameter # 371

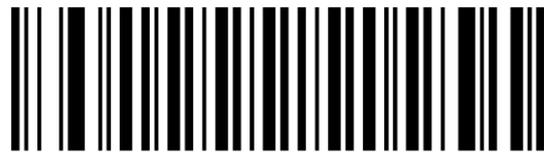
SSI # F0h 73h

Scan one of the following bar codes to enable or disable Composite bar codes of type TLC-39.



Enable TLC-39

(1)



\*Disable TLC-39

(0)

### 6.4 UPC Composite Mode

Parameter # 344

SSI # F0h 58h

Select an option for linking UPC symbols with a 2D symbol during transmission as if they were one symbol:

- UPC Never Linked - Transmit UPC bar codes regardless of whether a 2D symbol is detected.
- UPC Always Linked - Transmit UPC bar codes and the 2D portion. If 2D is not present, do not transmit the bar code.
- Autodiscriminate UPC Composites - The engine determines if there is a 2D portion, then transmits the UPC, as well as the 2D portion if present.



\*UPC Never Linked

(0)



UPC Always Linked

(1)



Autodiscriminate UPC Composites

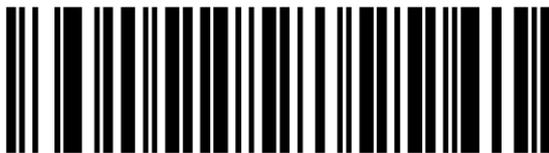
(2)

### 6.5 Composite Beep Mode

Parameter # 398

SSI # F0h, 8Eh

Scan one of the following bar codes to select the number of decode beeps that sound upon decoding a Composite bar code.



Single Beep After Both are Decoded

(0)



\*Beep as Each Code Type is Decoded

(1)



Double Beep After Both are Decoded

(2)

## 6.6 GS1-128 Emulation Mode for UCC/EAN Composite Codes

Parameter # 427

SSI # F0h, ABh

Scan one of the following bar codes to enable or disable this mode.



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

(1)



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

(0)

## 7 TRANSMIT CODE ID CHARACTER

Parameter # 45

SSI # 2Dh

A Code ID character identifies the code type of a scanned bar code. This is useful when decoding more than one code type. In addition to any single character prefix selected, the Code ID character is inserted between the prefix and the decoded symbol.

Select no Code ID character, a Symbol Code ID character, or an AIM Code ID character. For Code ID characters, see Symbol Code Identifiers and AIM Code Identifiers on next page (6.1 and 6.2).



Symbol Code ID Character

(2)



AIM Code ID Character

(1)



\*None

(0)

## 7.1 Symbol Code Identifiers

Code Character	Code Type
A	UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13
B	Code 39, Code 32
C	Codabar
D	Code 128, ISBT 128, ISBT 128 Concatenated
E	Code 93
F	Interleaved 2 of 5
G	Discrete 2 of 5, or Discrete 2 of 5 IATA
H	Code 11
J	MSI
K	GS1-128
L	Bookland EAN
M	Trioptic Code 39
N	Coupon Code
R	GS1 DataBar Family
S	Matrix 2 of 5
T	UCC Composite, TLC 39
U	Chinese 2 of 5
V	Korean 3 of 5
X	ISSN EAN, PDF417, Macro PDF417, Micro PDF417
z	Aztec, Aztec Rune
P00	Data Matrix
P01	QR Code, MicroQR
P02	Maxicode
P03	US Postnet
P04	US Planet
P05	Japan Postal

*Code ID Character*

P06	UK Postal
P08	Netherlands KIX Code
P09	Australia Post
P0A	USPS 4CB/One Code/Intelligent Mail
P0B	UPU FICS Postal
P0H	Han Xin
P0X	Signature Capture

## 7.2 AIM Code Identifiers

Each AIM Code Identifier contains the two-character string "]**c**" where:

] = Flag Character (ASCII 93)

c = Code Character (see Table below)

Code Character	Code Type
A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, ISBT 128, ISBT 128 Concatenated, GS1-128, Coupon (Code 128 portion)
d	Data Matrix
E	UPC/EAN, Coupon (UPC portion)
e	GS1 DataBar Family
F	Codabar
G	Code 93
H	Code 11
h	Han Xin
I	Interleaved 2 of 5
L	PDF417, Macro PDF417, Micro PDF417
L2	TLC 39
M	MSI
Q	QR Code, MicroQR
S	Discrete 2 of 5, IATA 2 of 5
U	Maxicode
z	Aztec, Aztec Rune
X	Bookland EAN, ISSN EAN, Trioptic Code 39, Chinese 2 of 5, Matrix 2 of 5, Korean 3 of 5, US Postnet, US Planet, UK Postal, Japan Postal, Australia Post, Netherlands KIX Code, USPS 4CB/One Code/Intelligent Mail, UPU FICS Postal, Signature Capture

## 8 LED AND BUZZER DESCRIPTIONS

<b>LED and buzzer descriptions</b>	<b>Meaning of representative</b>
Green light flashing (w/buzzer ringing)	Decode success
Red light solid	In charge
Red light goes out (When charging)	Charging is complete
Green light flashes continuously	Scanning built-in battery anomaly
Blue light flashing	Enter the Bluetooth pairing mode
Blue light goes out (In bluetooth pairing mode)	Bluetooth link successful
Green LED flash three times, buzzer sound three	Connection of USB or U Disk mode is successful