

MTB24 Smartphone Scanner User's Manual

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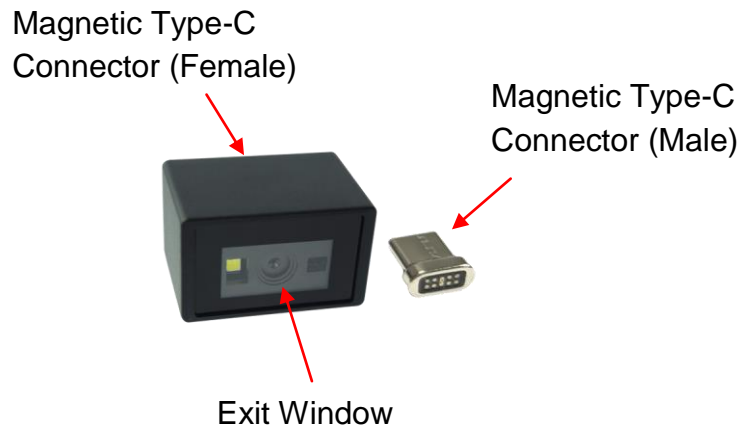
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Chapter 1 Introduction

This user's manual is dedicated to MTB24, a compact, plug-and-play barcode scanner revolutionizing data capture. The magnetic connector ensures durability, preventing USB breakage, and offers a reversible design for effortless connections. Paired with the ScanKey App featuring an on-screen floating scan button, it seamlessly integrates without disrupting the main application. Utilizing a USB HID interface, no modifications are needed. Experience the power of a Mobile Computer with Smartphone + MTB24 Scanner synergy.



Specifications

Optic & Performance	
Light Source	White LED Visible red LED
Sensor	640 x 480
Resolution	5mil / 0.125mm (1D) 10mil / 0.25mm (2D)
Scan Angle	Horizontal 37° Vertical 27.5°
Pitch Angle	±60°
Skew Angle	±60°
Roll Angle	360°
Print Contrast Ratio	40%
Width of Field	141mm (13Mil Code39)
Typical D.O.F (Environment: 800 lux)	5 Mil Code 39 : 61 ~ 102 mm
	13 Mil UPC/EAN : 52 ~ 294 mm
	15 Mil Code 128 : 52 ~ 405mm

	15 Mil QR Code: 41 ~ 221 mm
	10 Mil DataMatrix: 44 ~ 103 mm
	6.67 Mil PDF417: 54 ~ 133 mm
Physical Characteristics	
Dimension	W23.1 x L19.5 x H14 mm
Weight	6.2 g
Color	Black
Material	PC
Cable	Magnetic Type-C (M) to USB A(M) Cable
Trigger	On-screen Button (ScanKey®)
Electrical	
Operation Voltage	5.0 VDC
Working Current	< 156mA
Standby Current	< 85mA
Connectivity	
Interface/ Profile	USB HID
User Environment	
Operating Temperature	0 ~ 50°C
Storage Temperature	-20 ~ 60°C
Humidity	0% ~ 95%RH (Non-condensing)
Drop Durability	1.5M
Ambient Light	100,000 Lux (Sunlight)
1D Symbologies	UPC-A/ UPC-E0/ UPC-E1, EAN-8/ EAN-13, Code128, Code39, Code93, Codabar, Interleaved 2 of 5, Industrial 2 of 5, Matrix 2 of 5, Standard 2 of 5 (IATA), China Post 25, Code11, MSI Plessey, UK Plessey, GS1 Databar, GS1 Databar Limited, GS1 Databar Expanded
2D Symbologies	QR Code, Micro QR Code, Data Matrix, PDF417, Aztec, Han Xin, Code 16K
Regulatory	
ESD	Functional after 4KV contact, 8KV air discharge
EMC/RF	FCC Part 15B Class B CE EN55032/35
Safety Approval	EN/IEC62471 (Exempt Group)
Environmental	WEEE, RoHS 2.0

ScanKey® App

ScanKey® is an Android® app designed for user to trigger the Smartphone Scanner with a semi-transparent on-screen button and receive the barcode data scanned without interrupting the operation of the user's main application. The semi-transparent button will appear on the screen and continuously follow any app launched.

System Requirements:

1. Operating system: Android 7.1 or later version
2. Device must support USB OTG (see the note below)

*Note:

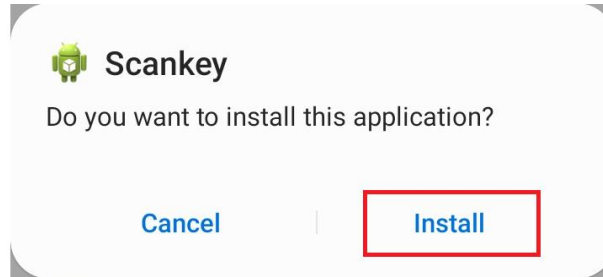
For Xiaomi, Vivo and Oppo device, USB OTG is disabled by default. Please go to Settings > Additional Settings > OTG Connection to enable USB OTG.

Please download the app from below link:

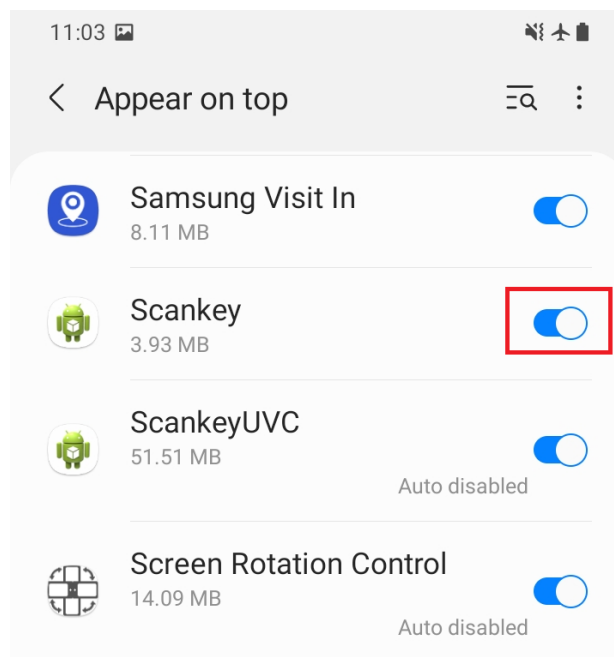
https://www.marson.com.tw/en/download/driver&utility/ScanKey_20230817-rc8.apk

Installation

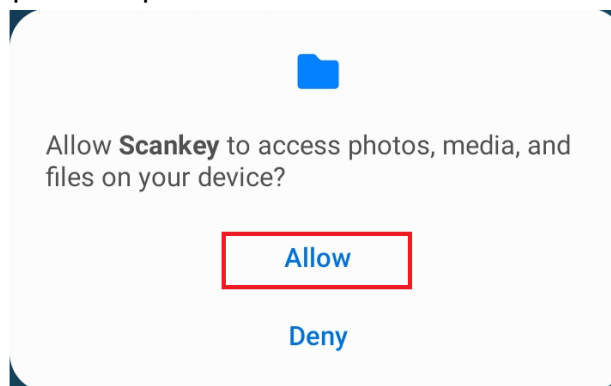
After downloading the ScanKey® apk file, tap the apk icon and tap “Install” in below dialog.



When “Appear on top” window appears, please enable ScanKey®.

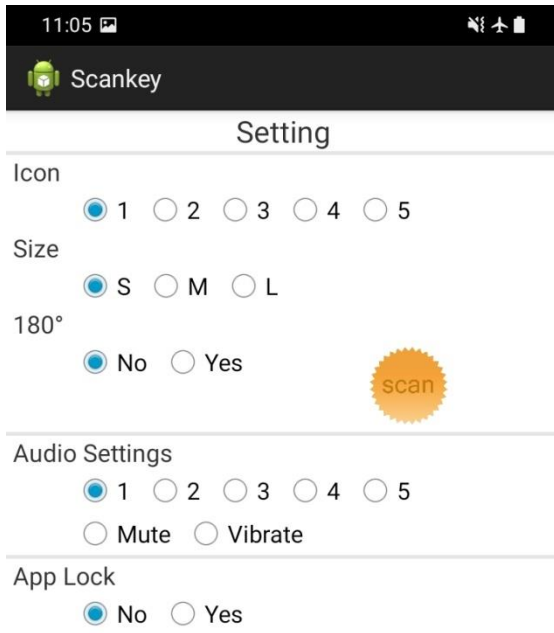


When below dialog appear, please tap Allow.

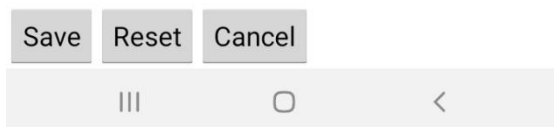


Introduction

Setting Window



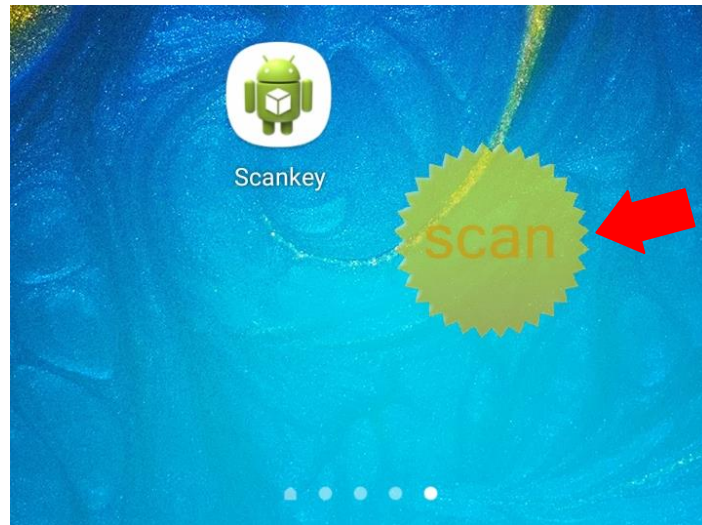
- ← Scan Button Icon - Style option
- ← Scan Button Icon - Size adjustment
- ← 180° - Rotate the Scan Button upside down
- ← Scan Sound - Tone option
- ← Scan Sound - Silent or Vibrate option
- ← App Lock - Once enabled, the moment you tap on the Scan button, the locked app will be launched at once



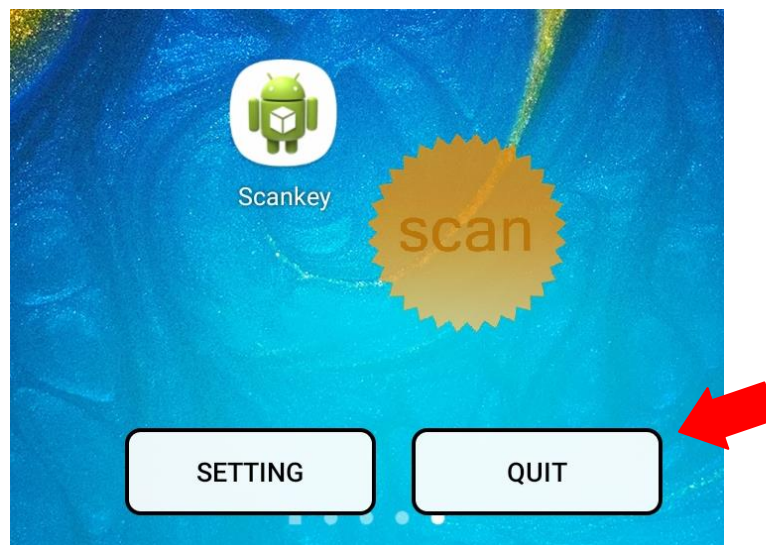
- ← Tap "Save" to save and exit the setting page
- ← Tap "Reset" to reset to default
- ← Tap "Cancel" to exit without saving the changes

Pop-up Menu

1. Long tap on the scan button for 5 seconds

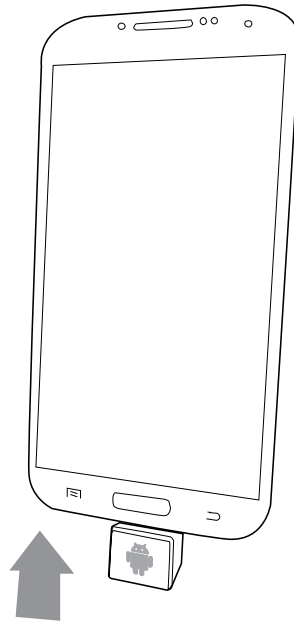


2. When Pop-up Menu appears, do not release scan button and:
 - (1) Drag the scan button to "Quit" to terminate the ScanKey app.
 - (2) Drag the scan button to "Setting" to enter the Setting Window.

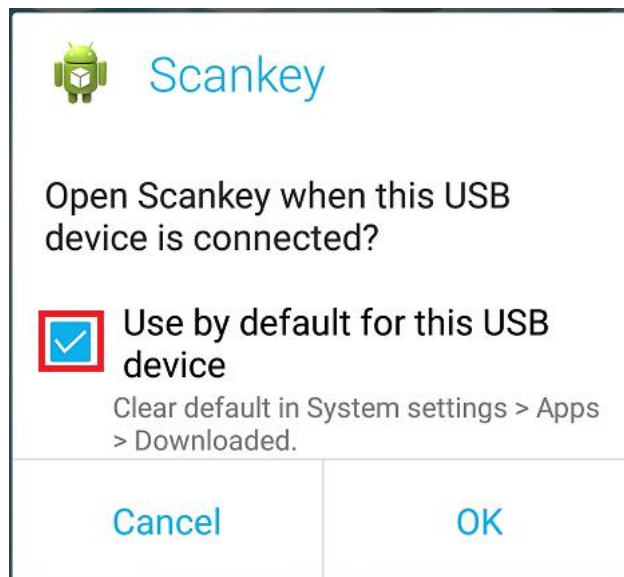


Launching ScanKey®

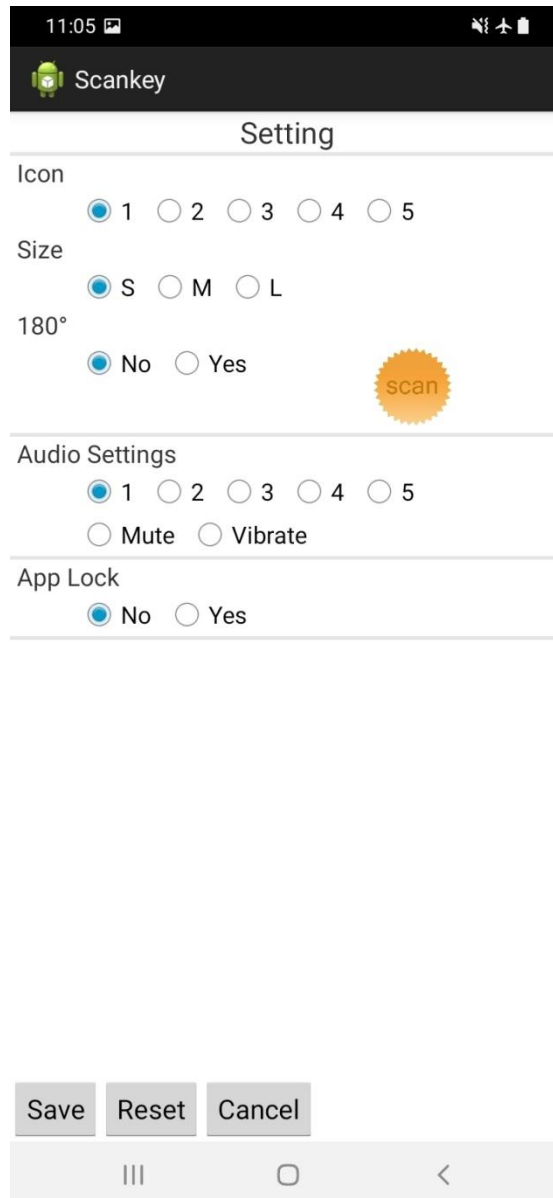
1. Please plug the Smartphone Scanner along with the magnetic adapter to your Android device.



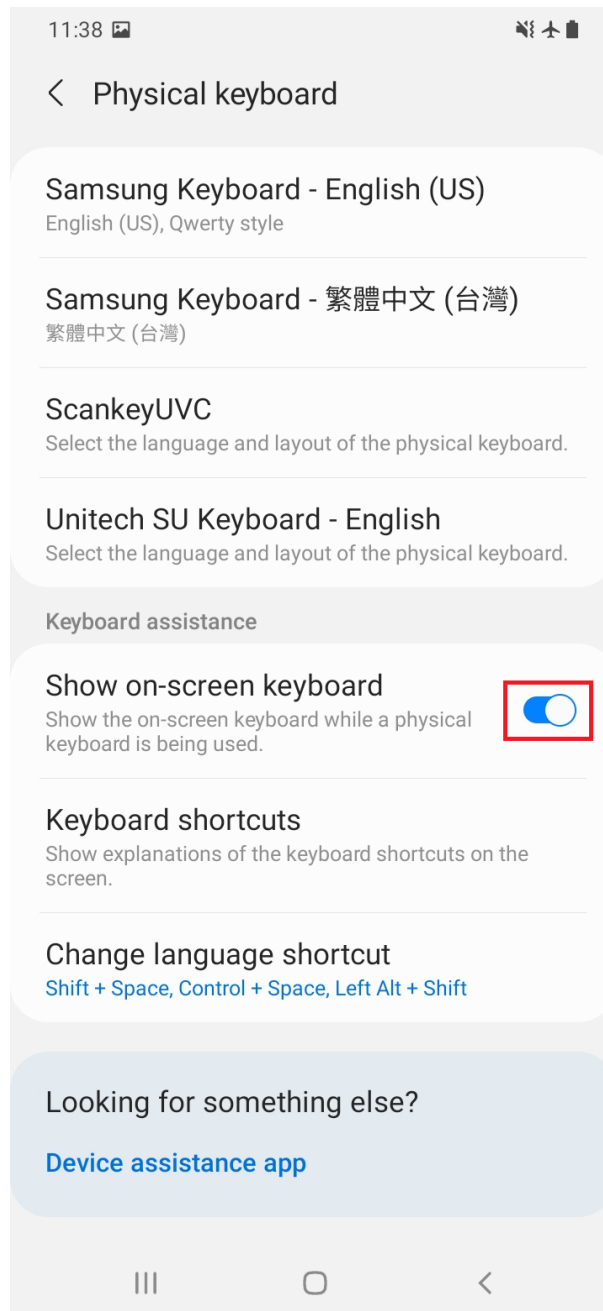
2. When below dialog appears, tick “Use by default for this USB device” and tap “OK”



3. The Setting Window will appear. Configure the settings according to your preference and tap "Save". A scan button will then appear on the screen. Please note that if the scan button is already on the screen before connecting Smartphone Scanner, the Setting Window will automatically close shortly after it pops up. If you wish to re-enter Setting Window, long tap on the scan button for 5 seconds until Pop-up Menu appear and drag the scan button to "Setting" icon.

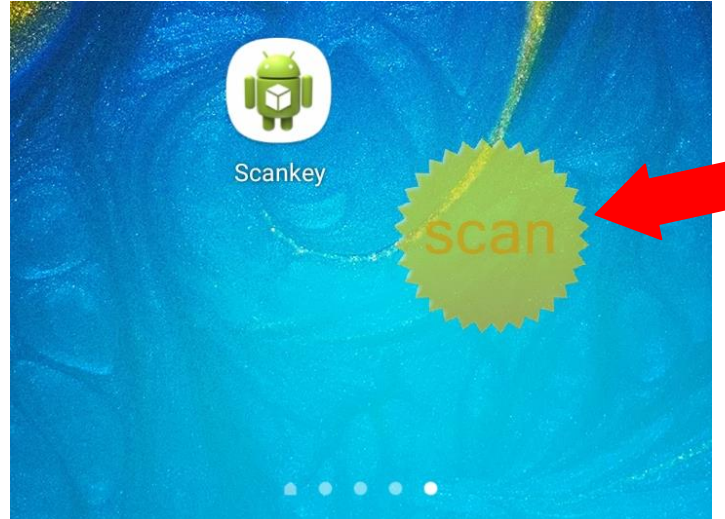


4. To make sure the on-screen keyboard functions properly when operating with the Smartphone Scanner (emulating an external keyboard), please disable “Physical Keyboard” or enable “On-screen Keyboard” in the Language and keyboard setting window on your Android device.

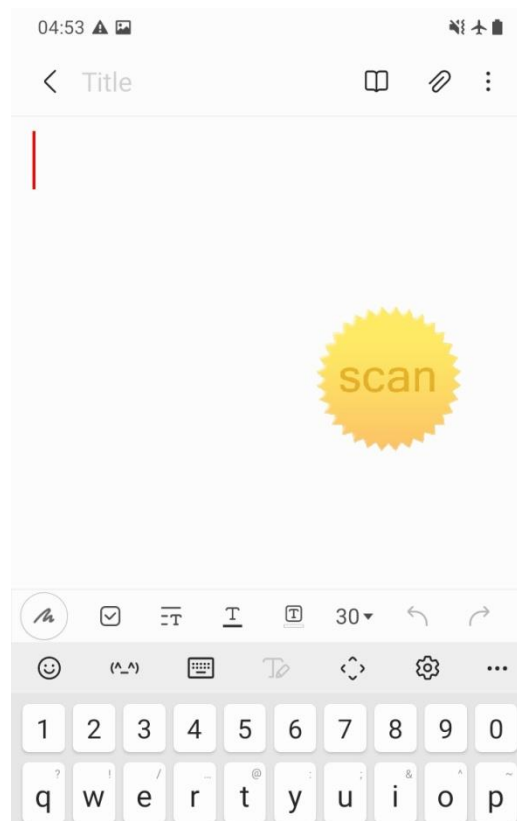


Scanning Operation

1. When ScanKey® is successfully launched, a semi-transparent scan button will appear on the screen. The button can be moved around to any corner you wish and will follow you anywhere you go and into any app you launch.



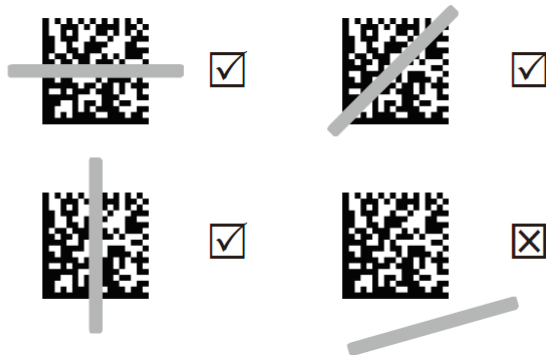
2. Now please enter the app that you want to enter barcode data. The app must be capable of receiving HID keyboard data.



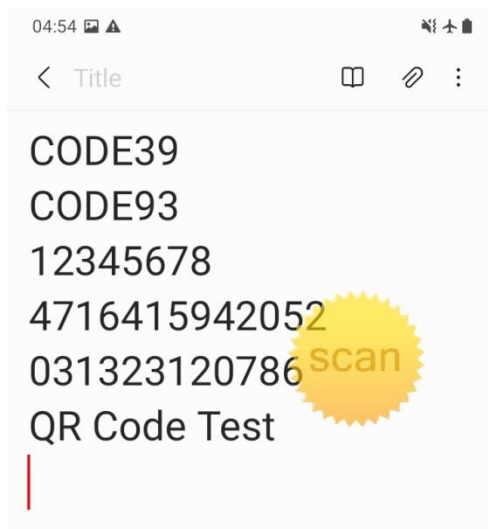
3. Tap on the scan button to trigger the Smartphone Scanner.



4. To scan a barcode, make sure the aiming beam fully covers the barcode.



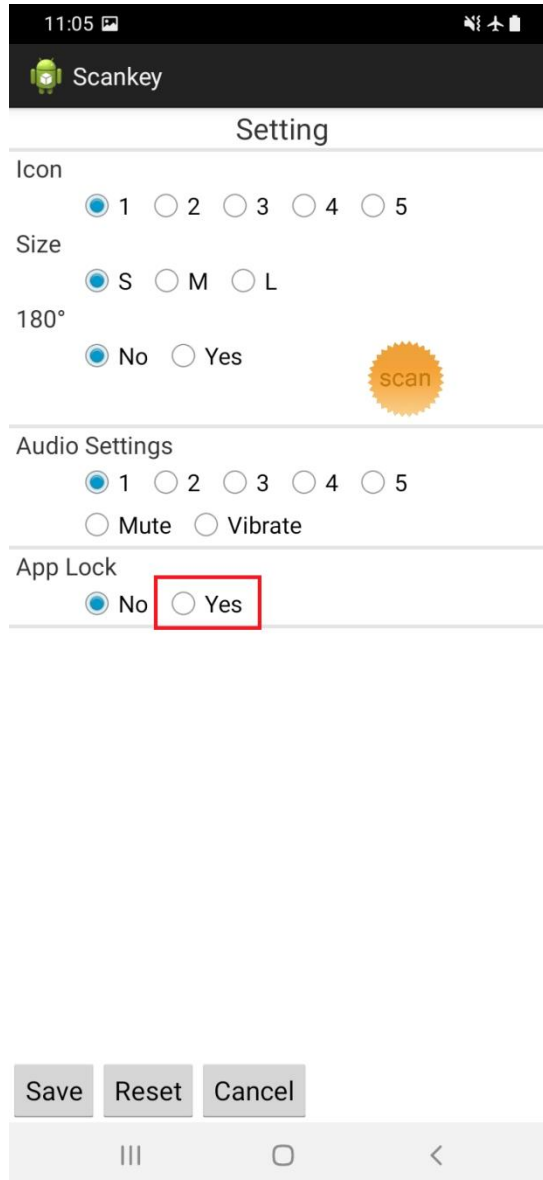
5. The scanned barcode data will be sent to the app immediately.



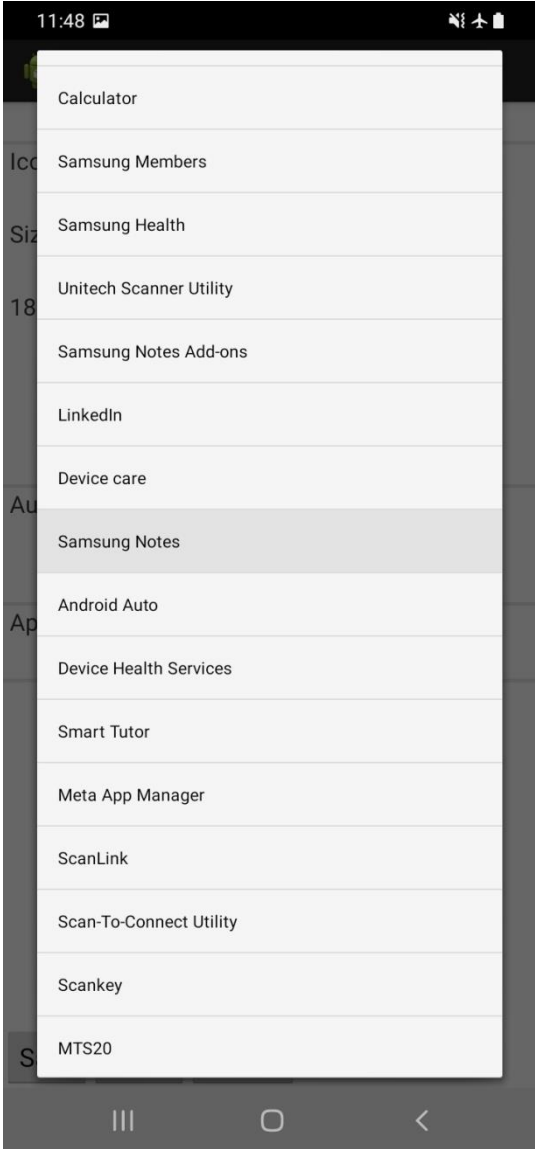
App Lock

App Lock enables simultaneous launching of both ScanKey® and your app. Please follow below steps:

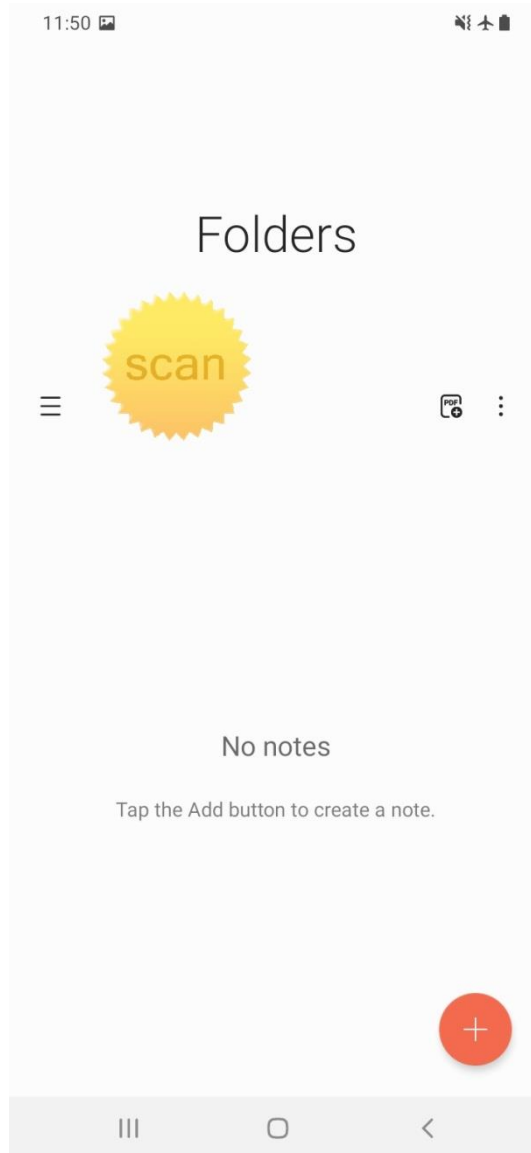
1. Enter the Setting Window and tap “Yes” in the App Lock section.



2. Select your desired app in the list and then tap "Save" to save and exit.



3. The next time you plug the Smartphone Scanner to your Android device, your app (the “locked app”) will be launched along with ScanKey®.



Ez Utility[®] App

Ez Utility[®] is an Android[®] app designed for user to configure Smartphone Scanner with user-friendly interface on Android device. Ez Utility[®] contains all the settings corresponding to the configuration barcodes from Chapter 2 to Chapter 5.

System Requirements:

1. Operating system: Android 6.0 or later version
2. Device must support USB OTG (see the note below)

*Note:

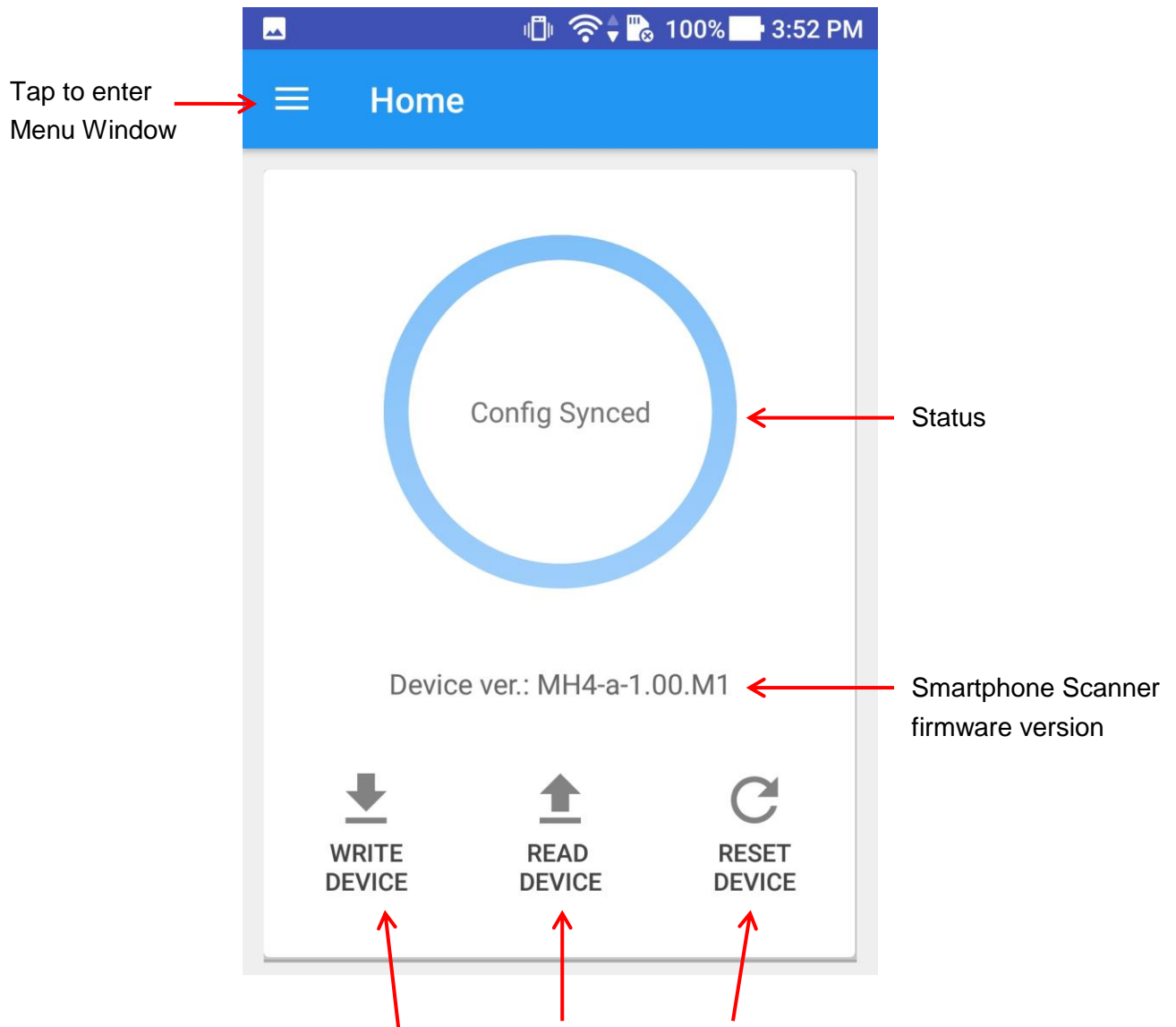
For Xiaomi, Vivo and Oppo device, USB OTG is disabled by default. Please go to Settings > Additional Settings > OTG Connection to enable USB OTG.

Please download the app from below link:

https://www.marson.com.tw/en/download/driver&utility/EzUtility_v1.0.0_20230311.apk

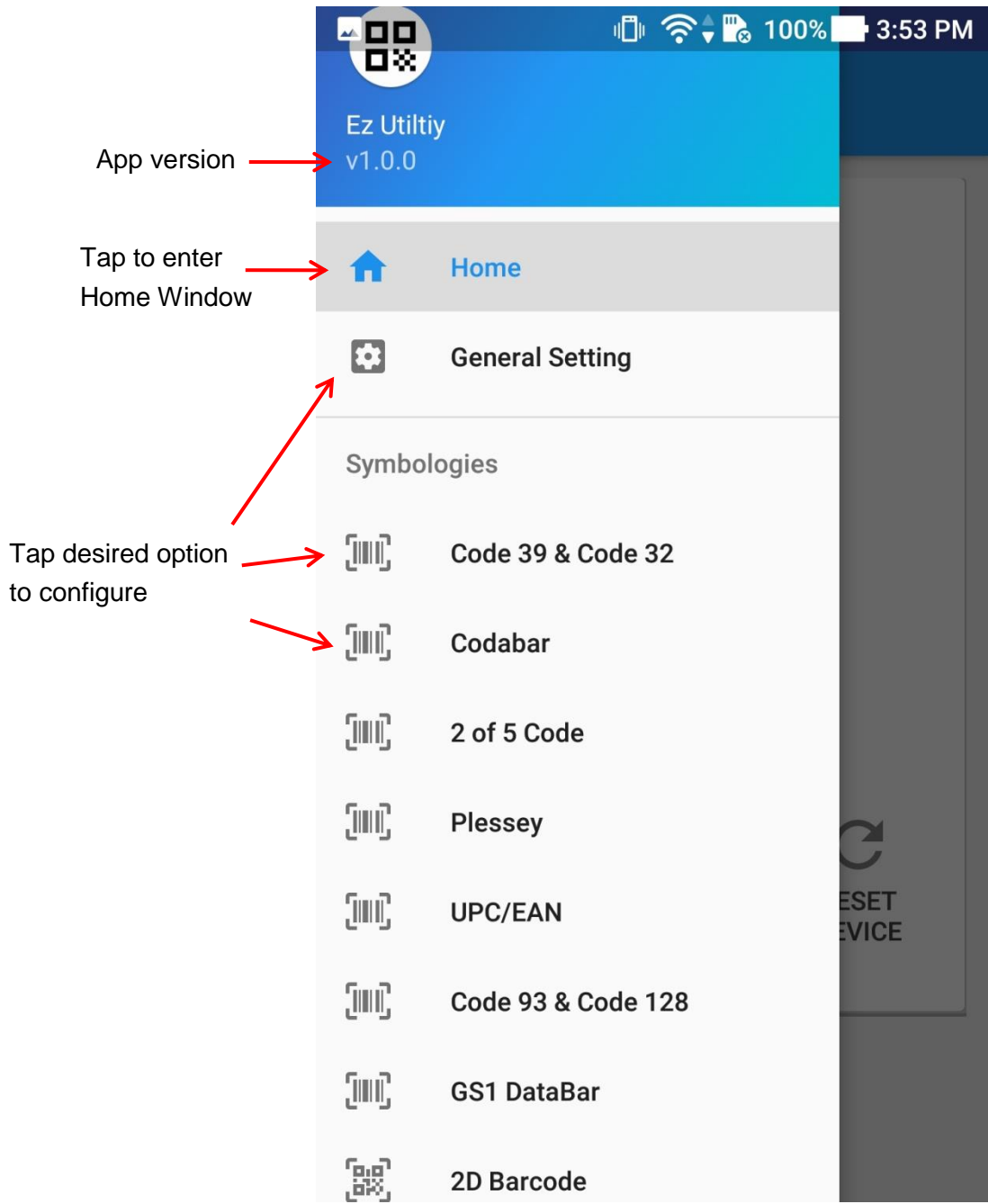
Introduction

Home Window



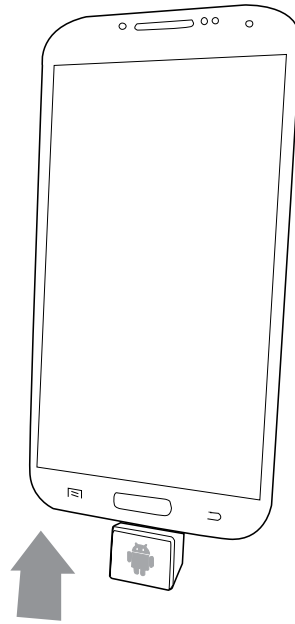
- Tap "Write Device" to upload changed configurations to Smartphone Scanner.
- Tap "Read Device" to download current configurations from Smartphone Scanner
- Tap "Reset Device" to reset Smartphone Scanner to default

Menu Window

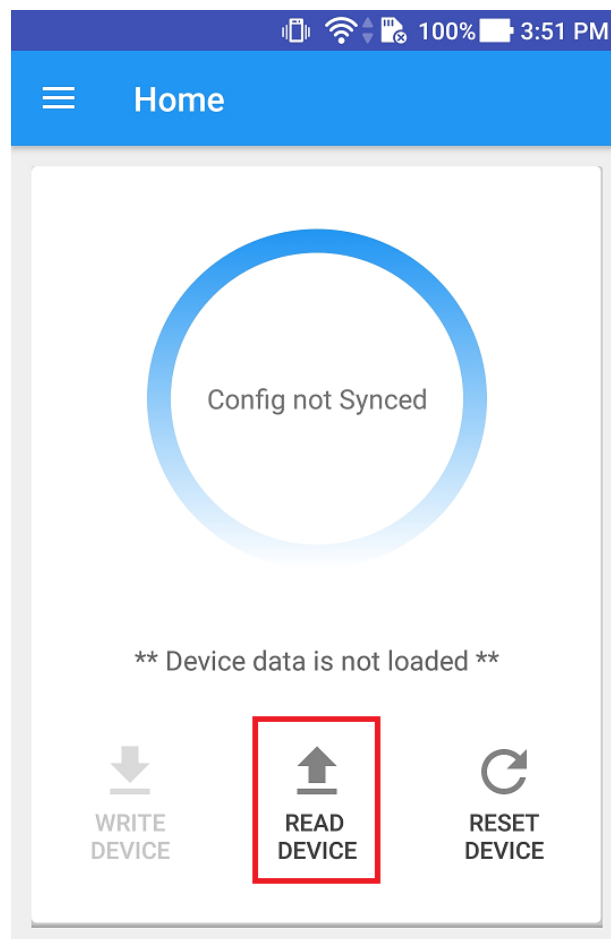


Operating Ez Utility®

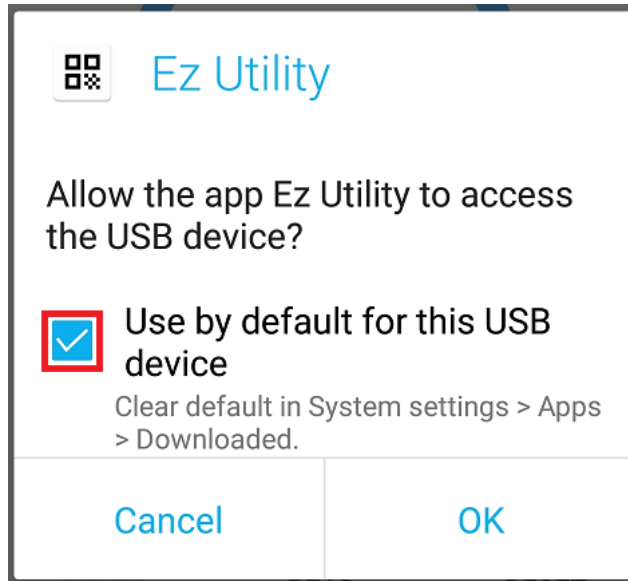
1. Please plug the Smartphone Scanner along with the magnetic adapter to your Android device.



2. Enter Ez Utility® and tap “Read Device” to download configurations from Smartphone Scanner.

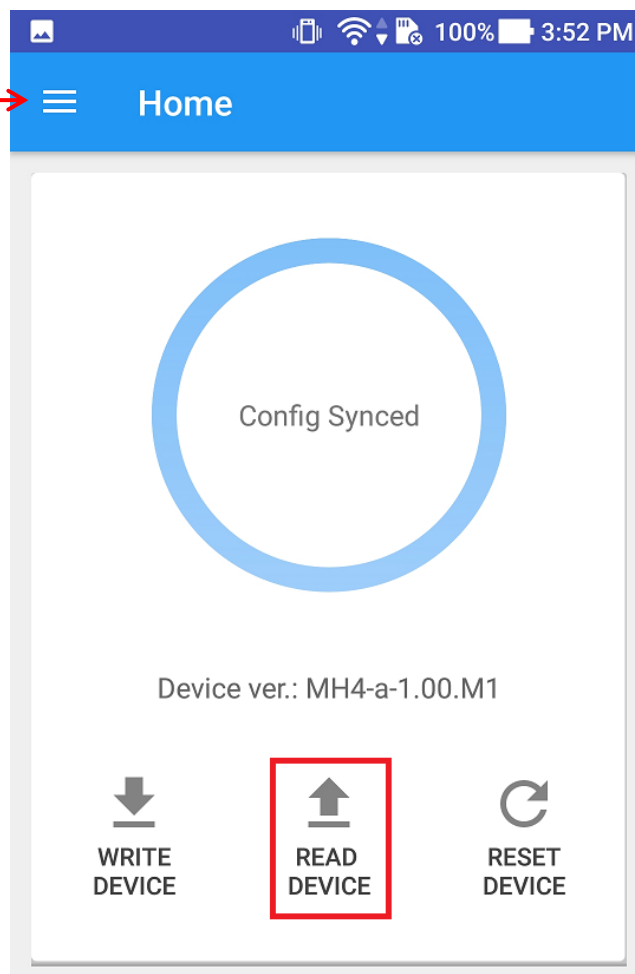


3. When below dialog appears, tick “Use by default for this USB device” and tap “OK”

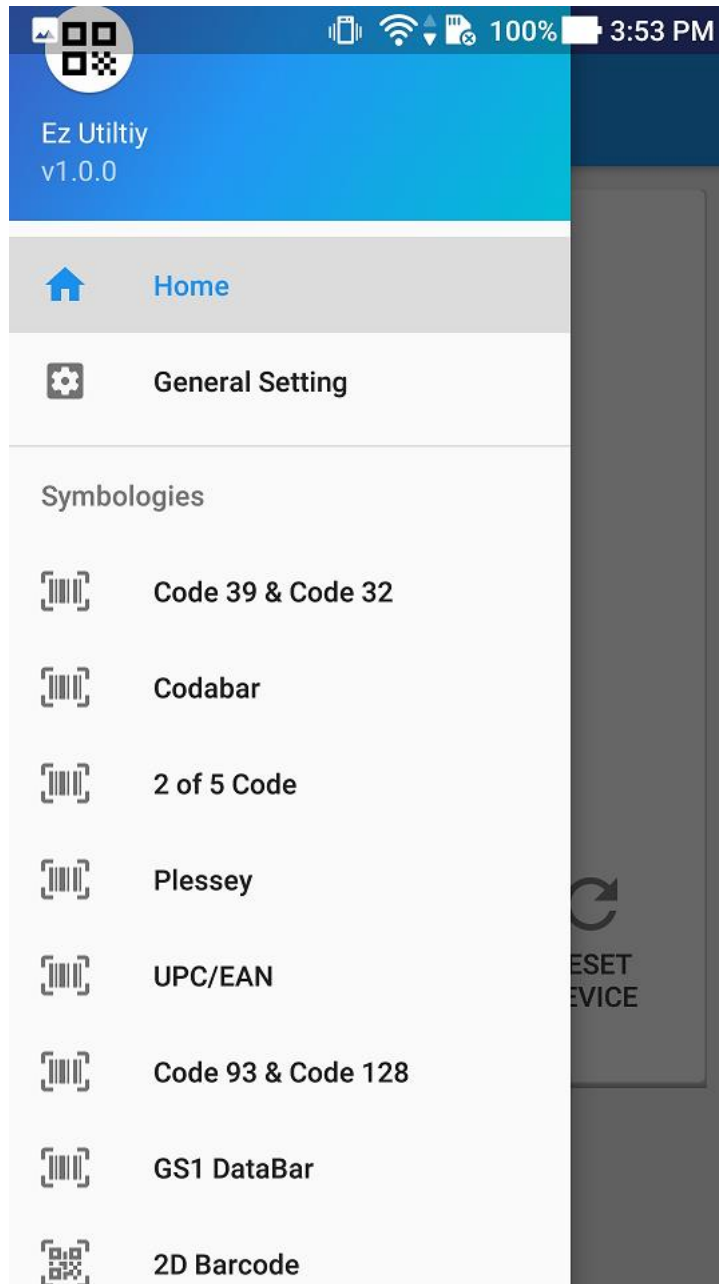


4. Tap “Read Device” again. The status will become “Config Synced”. Then tap the menu button to enter Menu Window.

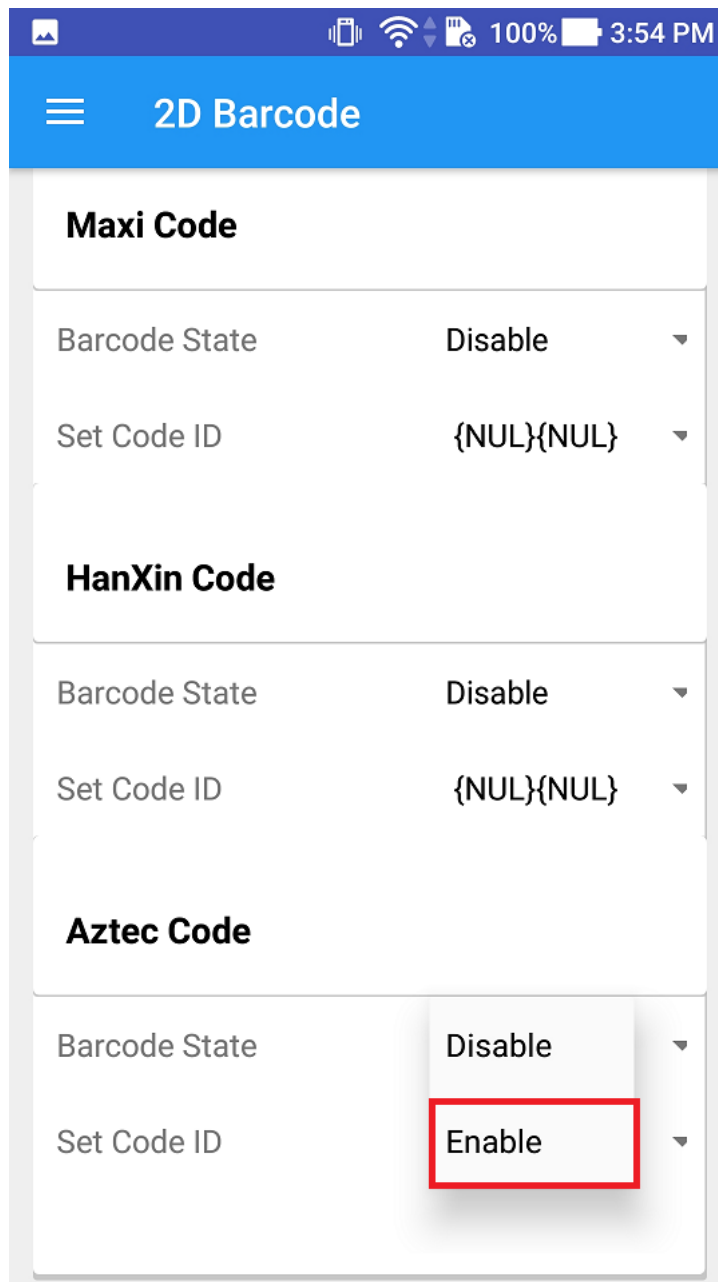
Tap to enter
Menu Window



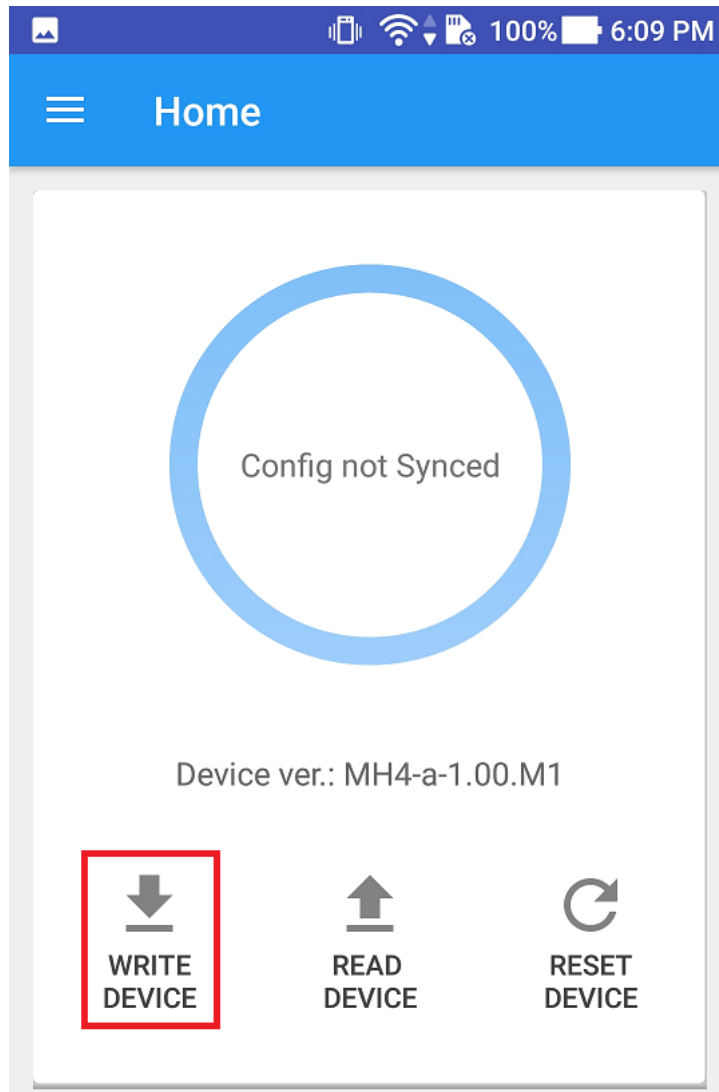
5. When Menu Window appears, enter configuration window by tapping the desired option, such as "2D Barcode".



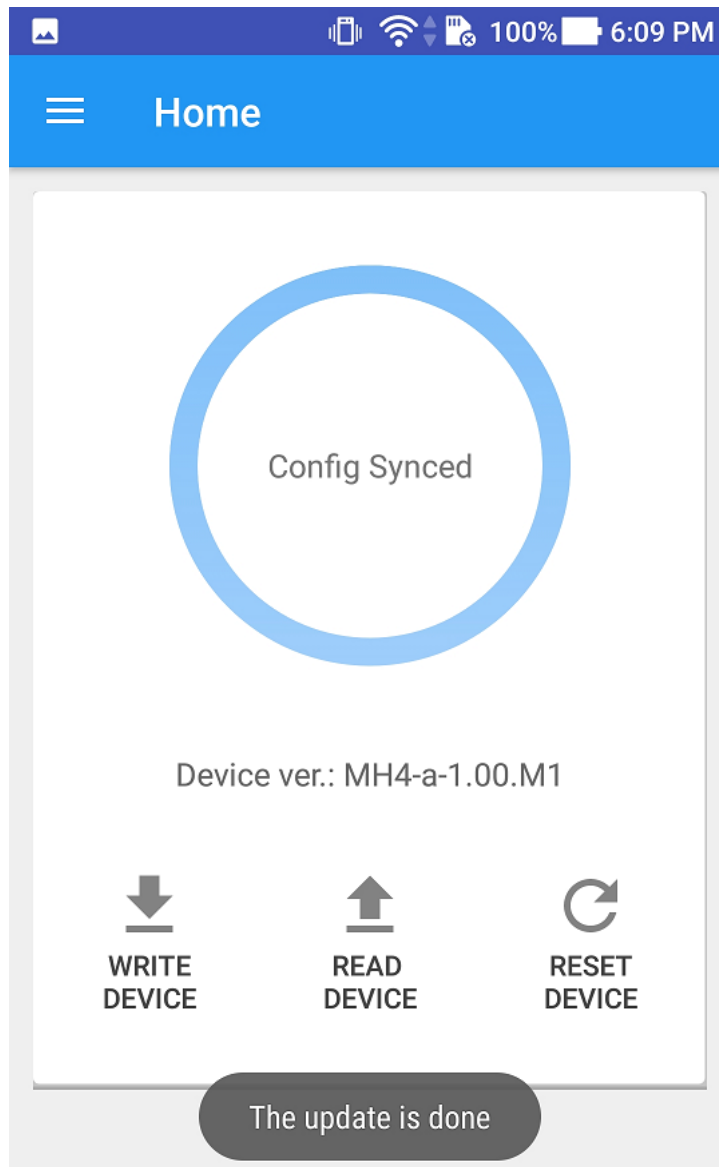
6. For example, if you want to enable Aztec, please go to Aztec Code section in the 2D Barcode window and tap "Enable" in the drop-down menu next to Barcode State.



7. When you are done with the configurations, go back to Home Window, where the status shows "Config not Synced" because the updated configurations in the Menu Window are different from the current configurations on Smartphone Scanner. Now please tap "Write Device".



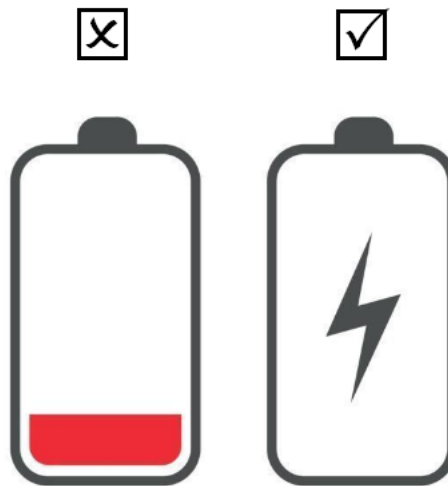
8. The status turning "Config Synced" indicates that the updated configurations in the Menu Window have been successfully uploaded to Smartphone Scanner.



Charging the Smartphone

A magnetic charging cable is enclosed in the package which allows you to charge the smartphone without removing the magnetic adapter.

Please make sure a lightning bolt icon is on the battery indicator while charging. If not, please remove the magnetic charging cable and replug again.



Chapter 2 General Settings

From Chapter 2 to Chapter 5 are the configuration barcodes for Smartphone Scanner. These settings can also be done by using Ez Utility[®] app. When a configuration barcode is successfully read by the Smartphone Scanner, an audio notification will be heard, with no barcode data displayed.

Barcode Configurability

Scanning below configuration barcodes will allow/prohibit user to change settings by scanning configuration barcodes in this manual.



.B015\$

Enable Barcode Configurability*



.B016\$

Disable Barcode Configurability

Factory Default

Scanning below configuration barcode will reset all parameters to factory default settings (the ones with * asterisk mark)



.A001\$

Factory Default

Check Version

To check firmware version, please scan below configuration barcode.



.A007\$

Check Version

Abort

If there is an error reading data barcode during multi-step configuration, you may cancel configuration by scanning below configuration barcode.



Data Format

HT/CR/ESC Converts to TAB/ENTER/ESCAPE



Note:

1. By default, HT [\$I], CR [\$M] and ESC [%A] is transmitted as <0x09>, <0x0D> and <0x1B> respectively.
2. When enabled, HT [\$I], CR [\$M] and ESC [%A] is transmitted as <TAB>, <ENTER> and <ESCAPE> on keyboard respectively.

Function Code Conversion



.C020\$

Off



.C019\$

On*

Note:

Once disabled, the scanner will output the original encoded data of the barcodes in Appendix – Function/Navigation/Modifier Keys.

Control Code Output Method



.D028\$

Ctrl Mode*



.D029\$

Alt Mode



.D027\$

Disable Output

Note:

Control code (0x01 ~ 0x1F) can be sent by two methods:

(1) Ctrl Mode:

A barcode of "A<HT>F" (0x41/0x09/0x46) is scanned, the output sequence is:

- a. Enter "A" – Press A key
- b. Enter "Ctrl + I" – Since 0x09 corresponds to "Ctrl + I", virtual keyboard will press and hold Ctrl key, press I key, and release Ctrl key and I key
- c. Enter "F" – Press F key

Since "Ctrl+I" is shortcut for italicizing text in some software applications, the result of above output sequence can be a regular A plus an italic F.

(2) Alt Mode:

For <HT>, the output sequence of virtual keyboard is:

Enter "Alt + 0 + 0 + 0 + 9" – Virtual keyboard will press and hold Alt key, press "0", "0", "0" and "9" on numeric keypad respectively, and release Alt key.

Control Code Table

ASCII	Hex	Dec	Ctrl Mode	Alt Mode
NUL	00	0	Ctrl+Shift+2	Alt+0+0+0+0
SOH	01	1	Ctrl+a	Alt+0+0+0+1
STX	02	2	Ctrl+b	Alt+0+0+0+2
ETX	03	3	Ctrl+c	Alt+0+0+0+3
EOT	04	4	Ctrl+d	Alt+0+0+0+4
ENQ	05	5	Ctrl+e	Alt+0+0+0+5
ACK	06	6	Ctrl+f	Alt+0+0+0+6
BEL	07	7	Ctrl+g	Alt+0+0+0+7
BS	08	8	Ctrl+h	Alt+0+0+0+8
HT	09	9	Ctrl+i	Alt+0+0+0+9
LF	0A	10	Ctrl+j	Alt+0+0+1+0
VT	0B	11	Ctrl+k	Alt+0+0+1+1
FF	0C	12	Ctrl+l	Alt+0+0+1+2
CR	0D	13	Ctrl+m	Alt+0+0+1+3
SO	0E	14	Ctrl+n	Alt+0+0+1+4
SI	0F	15	Ctrl+o	Alt+0+0+1+5
DLE	10	16	Ctrl+p	Alt+0+0+1+6
DC1	11	17	Ctrl+q	Alt+0+0+1+7
DC2	12	18	Ctrl+r	Alt+0+0+1+8
DC3	13	19	Ctrl+s	Alt+0+0+1+9
DC4	14	20	Ctrl+t	Alt+0+0+2+0
NAK	15	21	Ctrl+u	Alt+0+0+2+1
SYN	16	22	Ctrl+v	Alt+0+0+2+2
ETB	17	23	Ctrl+w	Alt+0+0+2+3
CAN	18	24	Ctrl+x	Alt+0+0+2+4
EM	19	25	Ctrl+y	Alt+0+0+2+5
SUB	1A	26	Ctrl+z	Alt+0+0+2+6
ESC	1B	27	Ctrl+[Alt+0+0+2+7

FS	1C	28	Ctrl+\	Alt+0+0+2+8
GS	1D	29	Ctrl+]	Alt+0+0+2+9
RS	1E	30	Ctrl+Shift+6	Alt+0+0+3+0
US	1F	31	Ctrl+Shift+-	Alt+0+0+3+1

Numeric Key



.D017\$

Numeric Key



.D018\$

Alphanumeric Key*

Note:

1. By default, the alphanumeric key is used for 34 recommended 34 digits. Scan NUMERIC KEY if you want to use the keys on the numeric keypad.
2. If you select NUMERIC KEY, the Num Lock status of the physical keyboard should be ON.

Capslock Mode



.A005\$

Capslock Off*



.A004\$

Capslock On



.A006\$

Capslock Free

Note:

When barcode scanner is set to Capslock Free mode, no matter keyboard Capslock LED indicator is ON or OFF, output will be always the same as the Original barcode. In other words, what you see is what output is.

Keyboard Layout



.C010\$

English (US)*



.C018\$

English (UK)



.C027\$

Danish



.C013\$

Spanish



.C021\$

Hungarian (QWERTZ)



.C024\$

Hungarian (QWERTY)



.C025\$

Canadian French



.C028\$

Dutch



.C014\$

Italian



.C012\$

French



.C011\$

German



.C016\$

Swiss German



.C023\$

Swiss French



.C026\$

Swedish



.C022\$

Czech (QWERTZ)



.C017\$

Czech (QWERTY)



.C029\$

Norwegian



.C030\$

Belgian



.C031\$

Portuguese



.C032\$

Slovak



.C033\$

Brazilian (QWERTY)



.C034\$

Canadian (Traditional)



.C009\$

Japanese



.C015\$

Alt Code

Intercharacter Delay

The configurable range is from 0 to 255ms, with 1ms increment. The larger the number, the longer the delay.



Set Intercharacter Delay
(Default = 4ms)

Example: Set Intercharacter Delay to 8ms

- Step1: Scan Set Intercharacter Delay
- Step2: Scan "0" "0" "8" in Appendix – Numbers
- Step3: Scan Set Intercharacter Delay

Interblock Delay

The configurable range is from 0 to 2550ms, with 10ms increment. The larger the number, the longer the delay.



Set Interblock Delay
(Default = 0ms)

Example: Set Interblock Delay to 20ms

- Step1: Scan Set Interblock Delay
- Step2: Scan "0" "0" "2" in Appendix – Numbers
- Step3: Scan Set Interblock Delay

GS Character Replacement



Enable GS Character Replacement



Disable GS Character Replacement*



Define Replacement Character

Note:

1. When enabled, the <GS> character in all barcodes will be replaced by the one defined by the user.
2. To define replacement character, please refer to below:

Example: Set Replacement Character as “X”

Step1: Scan “**Define Replacement Character**”

Step2: Scan “**X**” in Appendix – Upper Case Alphabets

Step3: Scan “**Define Replacement Character**”

Imaging Settings

Inverse Barcode



Disable Inverse Barcode*



Enable Inverse Barcode

Chapter 3 Reading Mode

Trigger Mode

In Trigger Mode the LED will stay on once the on-screen scan button (ScanKey[®]) is tapped, and will turn off automatically once a barcode is read or LED Auto-Off timeout expires.



.F002\$

Trigger Mode*

Auto-sensing Mode

In Auto-sensing Mode the LED will turn on automatically when any image change is detected and will turn off automatically after LED Auto-Off timeout expires. In Auto-sensing Mode the LED will not turn when the on-screen scan button (ScanKey[®]) is tapped.



.F007\$

Auto-sensing Mode

Advanced Reading Mode Settings

Auto-sensing Sensitivity

This setting influences how sensitive the scanner is to image changes in Auto-sensing, with higher sensitivity levels detecting even subtle changes and lower sensitivity levels requiring more noticeable changes to trigger the scanning. In an office setting, it is advisable to keep the sensitivity at a Medium level. However, in environments with low ambient light, it is recommended to set it to High.



.D030\$

Very High



.D031\$

High



.D032\$

Medium*



.D033\$

Low

Trigger Mode / Auto-sensing Mode – LED Auto-Off Timeout

LED Auto-Off Timeout (applicable for all reading modes) is the maximum scanning duration. When LED Auto-Off Timeout expires, the scanning operation stops automatically. The configurable range is from 0.1 to 25.5 sec.



.F043\$

LED Auto-off Timeout

(Default = 3 sec)

Example: Set LED Auto-Off Timeout to 10 sec

Step1: Scan LED Auto-Off Timeout

Step2: Scan “2” “4” in Appendix – Numbers

(01 = 0.1 sec, 02 = 0.2 sec, 03 = 0.3 sec, 04 = 0.4 sec, 05 = 0.5 sec, 06 = 1.0 sec,

07 = 1.5 sec, 08 = 2.0 sec, 09 = 2.5 sec, 10 = 3.0 sec, 11 = 3.5 sec, ...55 = 25.5 sec

Default = 14 (5 sec))

Step3: Scan LED Auto-Off Timeout

Auto-sensing Mode – Identical Read Interval

A barcode (or an identical one) can be re-scanned only after the defined amount of Identical Read Interval expires. The configurable range is 0.1 ~ 125 sec. 3 digits must be programmed during the multi-step configuration. (001 = 0.1 sec, 002 = 0.2 sec, 003 = 0.3 sec, 004 = 0.4 sec, 05 = 0.5 sec, 006 = 1 sec, 007 = 1.5 sec, 008 = 2.0 sec, 009 = 2.5 sec, 010 = 3 sec, 254 = 125 sec, 255 = unlimited)



.F040\$

Identical Read Interval

(Default = 0.5 sec)

Example: Set Identical Read Interval as 5 sec

Step1: Scan "Identical Read Interval"

Step2: Scan "0" "1" "4" in Appendix - Numbers

Step3: Scan "Identical Read Interval"

Chapter 4 Data Format

By default data format is as follows:

<Preamble> <Code ID> <Barcode Length> <Barcode Data> <Postamble> <Terminator>

Code ID



.A009\$

Disable Code ID*



.A008\$

Enable Factory ID



.A015\$

Enable Set ID

Set ID

Set ID can be up to 2 alphanumeric for each symbology.



.P005\$

Set ID – Code39



.P008\$

Set ID – Full ASCII Code39



.P011\$

Set ID – Code32



.P007\$

Set ID – Codabar



.P006\$

Set ID – Interleaved 2 of 5



.P021\$

Set ID – Standard 2 of 5



.P017\$

Set ID – Matrix 2 of 5



.P018\$

Set ID – Industrial 2 of 5



.P009\$

Set ID – Code11



.P012\$

Set ID – China Postal Code



.P014\$

Set ID – MSI Plessey



.P015\$

Set ID – UK Plessey



.P001\$

Set ID – EAN-13



.P004\$

Set ID – UPC-A



.P002\$

Set ID – EAN-8



.P003\$

Set ID – UPC-E



.P013\$

Set ID – Code93



.P010\$

Set ID – Code128 / GS1-128



.P024\$

Set ID – GS1 DataBar (Limited / Expanded)



.P026\$

Set ID – QR Code



.P050\$

Set ID – Micro QR Code



.P025\$

Set ID – PDF417



.P029\$

Set ID – MicroPDF417



.P027\$

Set ID – Data Matrix



.P033\$

Set ID – Aztec



.P030\$

Set ID – MaxiCode



.P034\$

Set ID – Hanxin



.P067\$

Set ID – Code 16K

Example: Set Code39 Set ID as XY

Step1: Scan “Set ID – Code39”

Step2: Scan “X” “Y” in Appendix – Upper Case Alphabets

Step3: Scan “Set ID – Code39”

Data Length



.D020\$

Send Data Length Off*



.D019\$

Send Data Length On

Preamble

Preamble can be up to 16 bytes of data.



.A012\$

Set Preamble

Example: Set Preamble as XYZ123

Step 1: Scan "Set Preamble"

Step 2: Scan "X" "Y" "Z" "1" "2" "3" in Appendix – Upper Case Alphabets & Numbers

Step 3: Scan "Set Preamble"

Postamble

Postamble can be up to 16 bytes of data.



.A013\$

Set Postamble

Example: Set Postamble as XYZ123

Step 1: Scan "Set Postamble"

Step 2: Scan "X" "Y" "Z" "1" "2" "3" in Appendix – Upper Case Alphabets & Numbers

Step 3: Scan "Set Postamble"

Clear Preamble/Postamble



Clear Preamble/Postamble

Terminator



None



<LF>



<CR>*



<CR><LF>



<TAB>



<Space>



<ESC>

Chapter 5 Symbologies

General Settings



.A002\$

Enable All Symbologies



.A003\$

Disable All Symbologies



.G036\$

Enable All 1D Symbologies



.G035\$

Disable All 1D Symbologies



.G038\$

Enable All 2D Symbologies



.G037\$

Disable All 2D Symbologies

Note: When all symbologies are disabled, configuration barcodes are still readable.

UPC-A

Enable/Disable UPC-A



.H001\$

Enable UPC-A*



.H002\$

Disable UPC-A

Check Digit



.H005\$

Send Check Digit*



.H006\$

Not Send Check Digit

UPC-A Expand to EAN-13



.H068\$

Enable UPC-A Expand to EAN-13



.H067\$

Disable UPC-A Expand to EAN-13*

Add On Supplement



.H033\$

Enable 5-digit Supplement



.H034\$

Disable 5-digit Supplement*



.H035\$

Enable 2-digit Supplement



.H036\$

Disable 2-digit Supplement*



.H060\$

Enable Addenda Required



.H059\$

Disable Addenda Required*

Note:

When Addenda Required is enabled, the scanner will only read an UPC-A barcode that has 2-digit or 5-digit addenda/supplement.

UPC-E

Enable/Disable UPC-E



.H007\$

Enable UPC-E*



.H008\$

Disable UPC-E

Check Digit



.H011\$

Send Check Digit*



.H012\$

Not Send Check Digit

Add On Supplement



.H037\$

Enable 5-digit Supplement



.H038\$

Disable 5-digit Supplement*



.H039\$

Enable 2-digit Supplement



.H040\$

Disable 2-digit Supplement*



.H056\$

Enable Addenda Required



.H055\$

Disable Addenda Required*

Note:

When Addenda Required is enabled, the scanner will only read an UPC-E barcode that has 2-digit or 5-digit addenda/supplement.

EAN-8

Enable/Disable EAN-8



.H019\$

Enable EAN-8*



.H020\$

Disable EAN-8

Check Digit



.H024\$

Not Send Check Digit



.H023\$

Send Check Digit*

Add On Supplement



.H029\$

Enable 5-digit Supplement



.H030\$

Disable 5-digit Supplement*



.H031\$

Enable 2-digit Supplement



.H032\$

Disable 2-digit Supplement*



.H062\$

Enable Addenda Required



.H061\$

Disable Addenda Required*

Note:

When Addenda Required is enabled, the scanner will only read an EAN-8 barcode that has 2-digit or 5-digit addenda/supplement.

EAN-13

Enable/Disable EAN-13



.H013\$

Enable EAN-13*



.H014\$

Disable EAN-13

Check Digit



.H018\$

Not Send Check Digit



.H017\$

Send Check Digit*

Add On Supplement



.H025\$

Enable 5-digit Supplement



.H026\$

Disable 5-digit Supplement*



.H027\$

Enable 2-digit Supplement



.H028\$

Disable 2-digit Supplement*



.H058\$

Enable Addenda Required



.H057\$

Disable Addenda Required*

Note:

When Addenda Required is enabled, the scanner will only read an EAN-13 barcode that has 2-digit or 5-digit addenda/supplement.

Code 39

Enable/Disable Code 39



.G008\$

Enable Code 39*



.G009\$

Disable Code 39

Verification



.G003\$

Disable CDV*



.G004\$

CDV & Send CD



.G005\$

CDV & Not Send CD

Start/Stop



.G015\$

Not Send Start/Stop*



.G014\$

Send Start/Stop

Full ASCII Code39



.G001\$

Enable Full ASCII Code39*



.G002\$

Disable Full ASCII Code39

Code39 Min/Max Length



.G006\$

Set Min Length
(Default = 01)



.G007\$

Set Max Length
(Default = 99)

Example: Set Min Length as 8, Max Length as 12 for Code39

Step1: Scan "**Set Min Length**"

Step2: Scan "0" "8" in Appendix – Numbers

Step3: Scan "**Set Min Length**"

Step4: Scan "**Set Max Length**"

Step5: Scan "1" "2" in Appendix – Numbers

Step6: Scan "**Set Max Length**"

Note: Configurable range for Min/Max Length is 01 ~ 99.

Code 32

Enable/Disable Code 32



.K010\$

Enable Code 32



.K011\$

Disable Code 32*

Leading/Tailing



.K012\$

Not Send Leading & Tailing



.K013\$

Send Leading Only



.K014\$

Send Tailing Only



.K015\$

Send Leading & Tailing*

Codabar (NW-7)

Enable/Disable Codabar



.1001\$

Enable Codabar*



.1002\$

Disable Codabar

Verification



.1005\$

Disable CDV*



.1006\$

CDV & Send CD



.1007\$

CDV & Not Send CD

Start/Stop



.1003\$

Send Start/Stop



.1004\$

Not Send Start/Stop*

Codabar Min/Max Length



Set Min Length
(Default = 01)



Set Max Length
(Default = 99)

Example: Set Min Length as 8, Max Length as 12 for Codabar

- Step1: Scan "Set Min Length"
- Step2: Scan "0" "8" in Appendix – Numbers
- Step3: Scan "Set Min Length"
- Step4: Scan "Set Max Length"
- Step5: Scan "1" "2" in Appendix – Numbers
- Step6: Scan "Set Max Length"

Note: Configurable range for Min/Max Length is 01 ~ 99.

Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5



.J001\$

Enable Interleaved 2 of 5



.J002\$

Disable Interleaved 2 of 5*

Verification



.J003\$

Disable CDV*



.J004\$

CDV & Send CD



.J005\$

CDV & Not Send CD

Interleaved 2 of 5 Min/Max Length



Set Min Length
(Default = 04)



Set Max Length
(Default = 32)

Example: Set Min Length as 8, Max Length as 12 for Interleaved 2 of 5

- Step1: Scan "**Set Min Length**"
- Step2: Scan "**0**" "**8**" in Appendix – Numbers
- Step3: Scan "**Set Min Length**"
- Step4: Scan "**Set Max Length**"
- Step5: Scan "**1**" "**2**" in Appendix – Numbers
- Step6: Scan "**Set Max Length**"

Note: Configurable range for Min/Max Length is 01 ~ 99.

Standard 2 of 5 (IATA)

Enable/Disable Standard 2 of 5



.N017\$

Enable Standard 2 of 5



.N018\$

Disable Standard 2 of 5*

Verification



.N019\$

Disable CDV*



.N020\$

CDV & Send CD



.N021\$

CDV & Not Send CD

Standard 2 of 5 Min/Max Length



.N022\$

Set Min Length

(Default = 04)



.N023\$

Set Max Length

(Default = 32)

Example: Set Min Length as 8, Max Length as 12 for Standard 2 of 5

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix – Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix – Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 99.

Matrix 2 of 5

Enable/Disable Matrix 2 of 5



.M010\$

Enable Matrix 2 of 5



.M011\$

Disable Matrix 2 of 5*

Verification



.M012\$

Disable CDV*



.M013\$

CDV & Send CD



.M014\$

CDV & Not Send CD

Matrix 2 of 5 Min/Max Length



.M015\$

Set Min Length

(Default = 04)



.M016\$

Set Max Length

(Default = 32)

Example: Set Min Length as 8, Max Length as 12 for Matrix 2 of 5

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix – Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix – Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 99.

Industrial 2 of 5

Enable/Disable Industrial 2 of 5



.N001\$

Enable Industrial 2 of 5



.N002\$

Disable Industrial 2 of 5*

Verification



.N003\$

Disable CDV*



.N004\$

CDV & Send CD



.N005\$

CDV & Not Send CD

Industrial 2 of 5 Min/Max Length



.N006\$

Set Min Length

(Default = 04)



.N007\$

Set Max Length

(Default = 32)

Example: Set Min Length as 8, Max Length as 12 for Industrial 2 of 5

Step1: Scan "Set Min Length"

Step2: Scan "0" "8" in Appendix – Numbers

Step3: Scan "Set Min Length"

Step4: Scan "Set Max Length"

Step5: Scan "1" "2" in Appendix – Numbers

Step6: Scan "Set Max Length"

Note: Configurable range for Min/Max Length is 01 ~ 99.

Code 11

Enable/Disable Code 11



.I010\$

Enable Code 11



.I011\$

Disable Code 11*

Verification



.I042\$

Single Digit*



.I043\$

Double Digits

Check Digit



.I013\$

Send Check Digit



.I014\$

Not Send Check Digit*

Code 11 Min/Max Length



.I015\$

Set Min Length

(Default = 04)



.I016\$

Set Max Length

(Default = 32)

Example: Set Min Length as 8, Max Length as 12 for Code11

Step1: Scan "Set Min Length"

Step2: Scan "0" "8" in Appendix – Numbers

Step3: Scan "Set Min Length"

Step4: Scan "Set Max Length"

Step5: Scan "1" "2" in Appendix – Numbers

Step6: Scan "Set Max Length"

Note: Configurable range for Min/Max Length is 01 ~ 99.

China Postal Code

Enable/Disable China Postal Code



.K001\$

Enable China Postal Code



.K002\$

Disable China Postal Code*

Verification



.K003\$

Disable CDV*



.K004\$

CDV & Send CD



.K005\$

CDV & Not Send CD

China Postal Code Min/Max Length



.K006\$

Set Min Length

(Default = 04)



.K007\$

Set Max Length

(Default = 32)

Example: Set Min Length as 8, Max Length as 12 for China Postal Code

Step1: Scan "**Set Min Length**"

Step2: Scan "**0**" "**8**" in Appendix – Numbers

Step3: Scan "**Set Min Length**"

Step4: Scan "**Set Max Length**"

Step5: Scan "**1**" "**2**" in Appendix – Numbers

Step6: Scan "**Set Max Length**"

Note: Configurable range for Min/Max Length is 01 ~ 99.

MSI Plessey

Enable/Disable MSI Plessey



.L001\$

Enable MSI Plessey



.L002\$

Disable MSI Plessey*

Verification



.L004\$

Send Check Digit*



.L003\$

Not Send Check Digit



.L009\$

Single Check Digit MOD10*



.L007\$

Double Check Digits MOD10

MSI Plessey Min/Max Length



.L005\$

Set Min Length

(Default = 04)



.L006\$

Set Max Length

(Default = 32)

Example: Set Min Length as 8, Max Length as 12 for MSI Plessey

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix – Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix – Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 99.

UK Plessey

Enable/Disable UK Plessey



.L010\$

Enable UK Plessey



.L011\$

Disable UK Plessey*

Check Digit



.L012\$

Send Check Digit



.L013\$

Not Send Check Digit*

Code 93

Enable/Disable Code 93



.G010\$

Enable Code 93*



.G011\$

Disable Code 93

Code 93 Min/Max Length



.G012\$

Set Min Length

(Default = 01)



.G013\$

Set Max Length

(Default = 99)

Example: Set Min Length as 8, Max Length as 12 for Code93

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix – Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix – Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 99.

Code 128/GS1-128

Enable/Disable Code 128/GS1-128



.J010\$

Enable Code 128/GS1-128*



.J011\$

Disable Code 128/GS1-128

Code 128/GS1-128 Min/Max Length



.J012\$

Set Min Length

(Default = 01)



.J013\$

Set Max Length

(Default = 99)

Example: Set Min Length as 8, Max Length as 12 for Code128/GS1-128

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix – Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix – Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 99.

GS1 DataBar (RSS-14)

Enable/Disable GS1 DataBar



.N032\$

Enable GS1 DataBar



.N033\$

Disable GS1 DataBar*

GS1 DataBar Limited (RSS-Limited)

Enable/Disable GS1 DataBar Limited



.N010\$

Enable GS1 DataBar Limited



.N011\$

Disable GS1 DataBar Limited*

GS1 DataBar Expanded (RSS-Expanded)

Enable/Disable GS1 DataBar Expanded



.N026\$

Enable GS1 DataBar Expanded



.N027\$

Disable GS1 DataBar Expanded*

GS1 DataBar Expanded Min/Max Length



.N030\$

Set Min Length

(Default = 04)



.N031\$

Set Max Length

(Default = 32)

Example: Set Min Length as 8, Max Length as 12 for GS1 DataBar Expanded

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix – Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix – Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 99.

QR Code

Enable/Disable QR Code



Enable QR Code*



Disable QR Code

Micro QR Code

Enable/Disable Micro QR Code



Enable Micro QR Code*



Disable Micro QR Code

Data Matrix

Enable/Disable Data Matrix



Enable Data Matrix*



Disable Data Matrix

PDF417

Enable/Disable PDF417



.G021\$

Enable PDF417*



.G022\$

Disable PDF417

MicroPDF417

Enable/Disable MicroPDF417



.G039\$

Enable MicroPDF417*



.G040\$

Disable MicroPDF417

Aztec

Enable/Disable Aztec



.G055\$

Enable Aztec



.G056\$

Disable Aztec*

MaxiCode

Enable/Disable MaxiCode



.G043\$

Enable MaxiCode



.G044\$

Disable MaxiCode*

Hanxin

Enable/Disable Hanxin



.G059\$

Enable Hanxin



.G060\$

Disable Hanxin*

Code 16K

Enable/Disable Code 16K



.N051\$

Enable Code 16K



.N050\$

Disable Code 16K*

Chapter 6 Appendix

Appendix – Numbers



0



1



2



3



4



5



6



7



8



9

Appendix – Upper Case Alphabets



A



B



C



D



E



F



G



H



I



J



K



L



M



N



O



P



Q



R



S



T



U



V



W



X



Y



Z

Appendix – Lower Case Alphabets



a



b



c



d



e



f



g



h



i



j



k



l



m



n



o



p





Appendix – Control Codes



NUL



SOH



STX



ETX



EOT



ENQ



ACK



BEL



BS



HT



LF



VT



FF



CR



SO



SI



DLE



DC1



DC2



DC3



DC4



NAK



SYN



ETB



CAN



EM



SUB



ESC



FS



GS



RS



US

Appendix – Symbols



+



-



.



\$



%



/



\



!



@



#



^



~



&



*



—



=





SP



DEL



Appendix – Function Keys



F1



F2



F3



F4



F5



F6



F7



F8



F9



F10



F11



F12



Home



End



Enter (Numeric Key)



App

Appendix – Navigation Keys



Cursor Left



Cursor Right



Cursor Up



Cursor Down



Page Up



Page Down



Tab



Back Tab



Esc



Enter



BS



Ins



Del

Appendix – Modifier Keys

\$T%L



Alt (Left) make *1

\$T%M



Alt (Left) break

\$T+E



Alt (Right) make

\$T+F



Alt (Right) break

\$T%N



Shift (Left) make *2

\$T%□



Shift (Left) break

\$T+I



Shift (Right) make

\$T+J



Shift (Right) break

\$T+K



Win (Left) make

\$T+L



Win (Left) break

\$T+M



Win (Right) make

\$T+N



Win (Right) break



Ctrl (Left) make *3



Ctrl (Left) break



Ctrl (Right) make



Ctrl (Right) break

Note:

- *1: When "Alt (Left) make" is programmed, please scan "Alt (Left) break" to resume barcode setting.
- *2: When "Shift (Left) make" is programmed, please scan "Shift (Left) break" to resume barcode setting.
- *3: When "Ctrl (Left) make" is programmed, please scan "Ctrl (Left) break" to resume barcode setting.

Appendix – Abort

If there is an error reading data barcode during multi-step configuration, you may cancel configuration by scanning below configuration barcode.



.P023\$

Abort

Appendix – Default Table

Function	Default	Remark
General Settings		
Barcode Configurability	ON	
Data Format		
HT/CR/ESC Converts to TAB/ENTER/ESCAPE	OFF	
Function Code Conversion	ON	
Control Code Output Method	Ctrl Mode	
Numeric Key	Alphanumeric Key	
Capslock Mode	OFF	
Keyboard Layout	English (US)	
Intercharacter Delay	4ms	
Interblock Delay	0ms	
GS Character Replacement	OFF	
Define Replacement Character	N/A	
Imaging Settings		
Inverse Barcode	OFF	
Reading Mode		
Trigger Mode	Trigger Mode	
Auto-sensing Mode	N/A	
Auto-sensing Sensitivity	Medium	
LED Auto-Off Timeout	3 sec	
Identical Read Interval	0.5 sec	
Data Format		
Code ID	Disable Code ID	
Set ID	N/A	
Data Length	OFF	
Preamble	N/A	
Postamble	N/A	
Terminator	CR	
Symbologies		
General Settings	N/A	
UPC-A		
Enable/Disable	ON	
Check Digit	Send	
UPC-A Expand to EAN-13	OFF	
5-digit Supplement	OFF	

2-digit Supplement	OFF
Addenda Required	OFF
UPC-E	
Enable/Disable	ON
Check Digit	Send
5-digit Supplement	OFF
2-digit Supplement	OFF
Addenda Required	OFF
EAN-8	
Enable/Disable	ON
Check Digit	Send
5-digit Supplement	OFF
2-digit Supplement	OFF
Addenda Required	OFF
EAN-13	
Enable/Disable	ON
Check Digit	Send
5-digit Supplement	OFF
2-digit Supplement	OFF
Addenda Required	OFF
Code 39	
Enable/Disable	ON
Verification	Disable CDV
Start/Stop	Not Send
Full ASCII Code39	ON
Min Length	01
Max Length	99
Code 32	
Enable/Disable	OFF
Leading/Tailing	Send Leading & Tailing
Codabar	
Enable/Disable	ON
Verification	Disable CDV
Start/Stop	Not Send
Min Length	01
Max Length	99
Interleaved 2 of 5	
Enable/Disable	OFF
Verification	Disable CDV
Min Length	04

Max Length	32
Standard 2 of 5 (IATA)	
Enable/Disable	OFF
Verification	Disable CDV
Min Length	04
Max Length	32
Matrix 2 of 5	
Enable/Disable	OFF
Verification	Disable CDV
Min Length	04
Max Length	32
Industrial 2 of 5	
Enable/Disable	OFF
Verification	Disable CDV
Min Length	04
Max Length	32
Code 11	
Enable/Disable	OFF
Verification	Single Digit
Check Digit	Send
Min Length	04
Max Length	32
China Postal Code	
Enable/Disable	OFF
Verification	Disable CDV
Min Length	04
Max Length	32
MSI Plessey	
Enable/Disable	OFF
Verification	Send Check Digit Single Check Digit MOD10
Min Length	04
Max Length	32
UK Plessey	
Enable/Disable	OFF
Check Digit	Not Send
Code 93	
Enable/Disable	ON
Min Length	01
Max Length	99

Code 128/GS1-128	
Enable/Disable	ON
Min Length	01
Max Length	99
GS1 DataBar (RSS-14)	
Enable/Disable	OFF
GS1 DataBar Limited (RSS-Limited)	
Enable/Disable	OFF
GS1 DataBar Expanded (RSS-Expanded)	
Enable/Disable	OFF
Min Length	04
Max Length	32
Surround AI's with Parentheses	OFF
QR Code	
Enable/Disable	ON
Micro QR Code	
Enable/Disable	ON
Data Matrix	
Enable/Disable	ON
PDF417	
Enable/Disable	ON
MicroPDF417	
Enable/Disable	ON
Aztec	
Enable/Disable	OFF
MaxiCode	
Enable/Disable	OFF
Hanxin	
Enable/Disable	OFF
Code 16K	
Enable/Disable	OFF

Appendix – Factory ID

#	Symbology	Code ID	HEX
0	UPC-A	A	41
1	UPC-E	E	45
2	EAN-8	S	53
3	EAN-13	F	46
4	Code 39	M	4D
5	Full ASCII Code39	D	44
6	Code32	B	42
7	Codabar	N	4E
8	Interleaved 2 of 5	I	49
9	Standard 2 of 5 (IATA)	R	52
10	Matrix 2 of 5	Y	59
11	Industrial 2 of 5	V	56
12	Code 11	J	4A
13	China Postal Code (Toshiba Code)	H	48
14	MSI Plessey	O	4F
15	UK Plessey	P	50
16	Code 93	L	4C
17	Code 128/GS1-128	K	4B
18	GS1 DataBar	G	47
19	QR Code	W	57
20	Micro QR Code	w	77
21	Data Matrix	X	58
22	PDF417	Z	5A



23	MicroPDF417	Z	5A
24	Aztec	z	7A
25	MaxiCode	Z	5A
26	Hanxin	X	58
27	Code 16K	16	31 36

Appendix – ASCII Table

Note: ASCII 0~31 are non-printable characters, ASCII 32~127 are printable characters.

Hex	Dec	ASCII
00	00	NUL (Null char.)
01	01	SOH (Start of Header)
02	02	STX (Start of Text)
03	03	ETX (End of Text)
04	04	EOT (End of Transmission)
05	05	ENQ (Enquiry)
06	06	ACK (Acknowledgment)
07	07	BEL (Bell)
08	08	BS (Backspace)
09	09	HT (Horizontal Tab)
0A	10	LF (Line Feed)
0B	11	VT (Vertical Tab)
0C	12	FF (Form Feed)
0D	13	CR (Carriage Return)
0E	14	SO (Shift Out)
0F	15	SI (Shift In)
10	16	DLE (Data Link Escape)
11	17	DC1 (XON) (Device Control 1)
12	18	DC2 (Device Control 2)
13	19	DC3 (XOFF) (Device Control 3)
14	20	DC4 (Device Control 4)
15	21	NAK (Negative Acknowledgment)
16	22	SYN (Synchronous Idle)
17	23	ETB (End of Trans. Block)
18	24	CAN (Cancel)
19	25	EM (End of Medium)
1A	26	SUB (Substitute)
1B	27	ESC (Escape)
1C	28	FS (File Separator)
1D	29	GS (Group Separator)
1E	30	RS (Request to Send)
1F	31	US (Unit Separator)
20	32	SP (Space)
21	33	! (Exclamation Mark)
22	34	" (Double Quote)

23	35	# (Number Sign)
24	36	\$ (Dollar Sign)
25	37	% (Percent)
26	38	& (Ampersand)
27	39	` (Single Quote)
28	40	((Right / Closing Parenthesis)
29	41) (Right / Closing Parenthesis)
2A	42	* (Asterisk)
2B	43	+ (Plus)
2C	44	, (Comma)
2D	45	- (Minus / Dash)
2E	46	. (Dot)
2F	47	/ (Forward Slash)
30	48	0
31	49	1
32	50	2
33	51	3
34	52	4
35	53	5
36	54	6
37	55	7
38	56	8
39	57	9
3A	58	: (Colon)
3B	59	; (Semi-colon)
3C	60	< (Less Than)
3D	61	= (Equal Sign)
3E	62	> (Greater Than)
3F	63	? (Question Mark)
40	64	@ (AT Symbol)
41	65	A
42	66	B
43	67	C
44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4A	74	J



4B	75	K
4C	76	L
4D	77	M
4E	78	N
4F	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5A	90	Z
5B	91	[(Left / Opening Bracket)
5C	92	\ (Back Slash)
5D	93] (Right / Closing Bracket)
5E	94	^ (Caret / Circumflex)
5F	95	_ (Underscore)
60	96	' (Grave Accent)
61	97	a
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g
68	104	h
69	105	i
6A	106	j
6B	107	k
6C	108	l
6D	109	m
6E	110	n
6F	111	o
70	112	p
71	113	q
72	114	r



73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7A	122	z
7B	123	{ (Left/ Opening Brace)
7C	124	(Vertical Bar)
7D	125	} (Right/Closing Brace)
7E	126	~ (Tilde)
7F	127	DEL (Delete)

Version History

Rev	Date	Description	Issued
1.0	2023.07.13	Initial Release	Shaw
1.1	2023.08.24	Updated Typical D.O.F	Shaw
1.2	2023.12.07	FW: MH4-a-1.01.M1 Updated EMC/RF Updated ScanKey/Ez Utility System Requirement and Download Link Updated Control Code Table Added Trigger Mode, Auto-sensing Mode, Auto-sensing Sensitivity	Shaw
1.3	2024.02.29	Added Caplocks Free, Identical Read Interval	Shaw