MT82Ag
Scan Engine
User's Manual

Version 1.9

DATE: 2023/05/11

Table of Content

1. Introduction 10

1.1 Manual Description 10

1.2 Product Requirements 10

1.3 Barcode Configurability 10

1.4 Factory Default 11

1.5 Custom Default 11

1.6 Check Version 11

2. Interface 12

2.1 UART 12

2.1.1 Baud Rate 12

2.1.2 Parity 13

2.2 USB HID 14

2.2.1 Intercharacter Delay 14

2.2.2 Polling Rate 15

2.2.3 Keyboard Layout 16

2.2.4 Alt Code 18

2.2.5 Control Mode 19

2.2.6 Capslock Mode 19

2.3 USB VCP 20

2.4 HID POS 20

3. Reading Mode 21

3.1 Batch Mode 21

3.2 Trigger Mode 21

3.2.1 Trigger Condition 21

3.2.2 LED Timeout 22

3.2.3 Identical Read Interval 22
3.3 Auto-sensing Mode 23
3.3.1 LED Timeout 24
3.3.2 Identical Read Interval 24
3.3.3 Image Stabilization Timeout 25
3.3.4 Auto-sensing Sensitivity 26
3.4 Continuous Mode 26
3.4.1 LED Timeout 26
3.4.2 Scan Interval 27
3.4.3 Identical Read Interval 27
4. Illumination and Aimer 29
4.1 Illumination 29
4.2 Aimer 29
5. Indicator 30
5.1 General Settings 30
5.2 Power Up Beep 30
5.3 Good Read Beep 30
5.3.1 Indicator Beep Type 30
5.3.2 Beep Volume 31
5.4 Configuration Barcode Beep 31
5.5 Good Read LED and duration 31
5.6 Not Good Read (NGR) Message 32
6. Data Format 33
6.1 General Settings 33
6.2 Preamble + Code ID 33
6.3 Preamble 33

6.3.1 Enable/Disable/Set Preamble 33
6.4 Code ID 34
6.4.1 Enable/Disable/Reset Code ID 34
6.4.2 Set Code ID 34
6.5 Postamble 37
6.5.1 Enable/Disable Postamble 37
6.5.2 Set Postamble 37
6.6 Terminator 38
6.6.1 Enable/Disable Terminator 38
6.6.2 Set Terminator 38
6.7 Data 39
6.7.1 Data Output 39
6.7.2 Data Length 39
6.8 Encoding Format 39
6.9 ECI mode 40
7. Symbologies 41
7.1 General Settings 41
7.2 Inverse Barcode 41
7.3 Code128 42
7.3.1 Reset to Default 42
7.3.2 Enable/Disable Code128 42
7.3.3 Min/Max Length 42
7.4 EAN-8 43
7.4.1 Reset to Default 43
7.4.2 Enable/Disable EAN-8 43
7.4.3 Check Digit 44

7.4.4 Supplement 44
7.5 EAN-13 44
7.5.1 Reset to Default 44
7.5.2 Enable/Disable EAN-13 45
7.5.3 Check Digit 45
7.5.4 Supplement 45
7.5.5 EAN-13 to ISBN 46
7.5.6 EAN-13 to ISSN 46
7.6 UPC-E0 46
7.6.1 Reset to Default 46
7.6.2 Enable/Disable UPC-E0 46
7.6.3 Check Digit 47
7.6.4 System Number 47
7.7 UPC-E1 47
7.7.1 Reset to Default 47
7.7.2 Enable/Disable UPC-E1 47
7.7.3 Check Digit 48
7.7.4 System Number 48
7.7.5 Supplement 48
7.8 UPC-A 49
7.8.1 Reset to Default 49
7.8.2 Enable/Disable UPC-A 49
7.8.3 UPC-A to EAN-13 49
7.8.4 Check Digit 49
7.8.5 System Number 50
7.8.6 Supplement 50

7.9 Interleaved 2/5 50
7.9.1 Reset to Default 50
7.9.2 Enable/Disable Interleaved 2/5 51
7.9.3 Min/Max Length 51
7.9.4 Verification 51
7.10 Matrix 2/5 52
7.10.1 Reset to Default 52
7.10.2 Enable/Disable Matrix 2/5 52
7.10.3 Min/Max Length 52
7.10.4 Verification 53
7.11 Industrial 2/5 54
7.11.1 Reset to Default 54
7.11.2 Enable/Disable Industrial 2/5 54
7.11.3 Min/Max Length 54
7.11.4 Verification 55
7.12 IATA 2/5 55
7.12.1 Reset to Default 55
7.12.2 Enable/Disable IATA 2/5 55
7.12.3 Min/Max Length 56
7.12.4 Verification 56
7.13 Code39 57
7.13.1 Reset to Default 57
7.13.2 Enable/Disable Code39 57
7.13.3 Send Start & Stop 57
7.13.4 Min/Max Length 58
7.13.5 Verification 58

7.13.6 Enable/Disable Code32 59
7.13.7 Full ASCII Code39 59
7.14 Codabar 59
7.14.1 Reset to Default 59
7.14.2 Enable/Disable Codabar 59
7.14.3 Min/Max Length 60
7.14.4 Verification 60
7.14.5 Send Start & Stop 61
7.15 Code93 61
7.15.1 Reset to Default 61
7.15.2 Enable/Disable Code93 62
7.15.3 Min/Max Length 62
7.16 Code11 63
7.16.1 Reset to Default 63
7.16.2 Enable/Disable Code11 63
7.16.3 Min/Max Length 63
7.17 MSI Plessey 64
7.17.1 Reset to Default 64
7.17.2 Enable/Disable MSI Plessey 64
7.17.3 Min/Max Length 64
7.18 GS1 DataBar 65
7.19 GS1 DataBar Limited 65
7.20 GS1 DataBar Expanded 66
7.21 Plessey 66
7.21.1 Reset to Default 66
7.21.2 Enable/Disable Plessey 66

7.21.3 Min/Max Length 66
7.21.4 Check Digit 67
7.22 PDF417 67
7.23 MicroPDF417 68
7.24 QR Code 68
7.25 Micro QR Code 68
7.26 Data Matrix 68
7.27 Aztec 69
8. Configuration Barcode 70
8.1 Data 0~F 70
8.2 Save & Abort 71
Appendix 72
Appendix A - Default Table 72
Appendix B - Code ID 77
Appendix C - ASCII Table 78
Appendix D - Configuration Method 82
LED Timeout 82
Image Stabilization Timeout 82
Identical Read Interval 82
Auto-sensing Threshold 82
Scan Interval 82
Preamble/Postamble 83
Terminator 83
Code ID 83
NGR (Not Good Read) Message 83
Min/Max Length 83

Intercharacter Delay 84

Good Read LED Duration 84

Appendix E – Control Code Table..... 85

Version History..... 86

1. Introduction

1.1 Manual Description

This user's manual mainly provides instruction on configuring MT82Ag. By scanning the configuration barcodes in this manual, you can change MT82Ag's interface, reading mode, data format and so on. The appendix lists the default configurations of MT82Ag. In most cases, user can use MT82Ag without further configuration.

1.2 Product Requirements

Model	Firmware Version	Interface
MT82Ag	V2.18.25.4 or up	UART
		USB HID
		USB VCP
		HID POS

1.3 Barcode Configurability

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

Enable Barcode Configurability*

Disable Barcode Configurability

Scanning below configuration barcodes will allow/prohibit configuration barcode data output.

Enable Config Barcode Data Output

Disable Config Barcode Data Output*

1.4 Factory Default

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

Factory Default

1.5 Custom Default

You can create your own custom default. Scan **Save Custom Default** configuration barcode below and all the current settings of MT82Ag will be saved to your custom default, overwriting, if any, the previous one. Scan **Custom Default** to reset MT82Ag to the custom default settings.

Save Custom Default

Custom Default

1.6 Check Version

To check firmware version, please scan below configuration barcode.

Check Version

2. Interface

MT82Ag provides UART serial interface and multiple USB interfaces to communicate with the host. Through communication interface, it is possible to receive barcode data and send command to control MT82Ag at the same time.

2.1 UART

Scanning below configuration barcode will set MT82Ag to UART interface, which is based on TTL level signals. For RS232 communication, a conversion circuit must be added externally.

UART

Parameter	Default
Serial communication type	UART (TTL-232)
Baud Rate	9600
Parity	None
Data Bits	8
Stop Bits	1
Hardware Flow Control	None

2.1.1 Baud Rate

The unit of Baud Rate is bps (bits per second); below are available options:

1200

2400

4800

9600*

14400

19200

38400

57600

115200

2.1.2 Parity

Three parity options are available:

None*

Odd

Even

2.2 USB HID

Scanning below configuration barcode will set MT82Ag to USB HID interface, in which MT82Ag becomes an HID keyboard device.

USB HID*

2.2.1 Intercharacter Delay

Intercharacter delay is the time interval between the release of last key and the pressing of the next key. The configurable range is from 0 to 75ms; default is 2ms. Please refer to Appendix D for configuration method of **Set Intercharacter Delay**.

2ms*

0ms

5ms

10ms

Set Intercharacter Delay

2.2.2 Polling Rate

The smaller the value, the faster MT82Ag sends characters to the host. If the host loses characters, please increase polling rate.

1ms*

2ms

3ms

4ms

5ms

6ms

7ms

8ms

9ms

10ms

2.2.3 Keyboard Layout

English (USA)*

French

Italian

German

Spanish

Turkish Q

English (UK)

Belgian

Portuguese (Portugal)

Portuguese (Brazil)

Hungarian

Turkish F

Greek

Swedish

Finnish

Danish

Czech

Austrian

Italian (142)

Russian

Russian (Typewriter)

Arabian

Irish

Polish (214)

Polish (Programmers)

Dutch

Japanese

Thai

Croatian

Romanian

Bulgarian

Slovak

North Korean

2.2.4 Alt Code

To ensure that all ASCII code (0x00~0xFF) can be transmitted correctly regardless of keyboard layout, Alt Code can be enabled. When Alt Code is enabled, transmission speed will be slower because all keyboard data is sent by key combinations. Please select one of the following modes according to your applications:

Mode 1: Send all ASCII code (0x20~0xFF), not supported by current keyboard layout, by Alt Code.

Mode 2: Send all ASCII code (0x20~0xFF) by Alt Code.

Mode 3: Send all ASCII code (0x00~0xFF) by Alt Code.

Note: When **Mode 3** and **Control Mode** are enabled at the same time, Control Code (0x00~0x1F) will be sent by Ctrl key combinations.

Disable Alt Code*

Mode 1

Mode 2

Mode 3

2.2.5 Control Mode

Control Code (0x00~0x1F) can be transmitted with two different set of key code depending on Control Mode status. Please refer to Appendix E for corresponding key code for each Control Code.

Ctrl Mode Off*

Ctrl Mode On

2.2.6 Capslock Mode

Letter case of all alphabets (A~Z) can be altered by below configurations.

Capslock Off*

Invert Case

All Upper Case

All Lower Case

2.3 USB VCP

When configured to USB VCP interface, MT82Ag can communicate with the host via USB Virtual COM, which requires VCP driver to be installed.

USB VCP

2.4 HID POS

When configured to USB HID POS interface, MT82Ag can communicate with the host via USB HID, which requires no driver.

HID POS

vid: 0x26f1

pid: 0x8803

Host's command:

Byte	Content
0	Message ID (0x04)
1	Data length
2-61	Data (CMD)
62	0x00, 1 byte reserved
63	0x00 (no data behind) 0x01 (more data behind)

Scan engine's response:

Byte	Content
0	Message ID (0x02)
1	Data length
2-57	Data (DATA)
58-62	0x00, 5 bytes reserved
63	0x00 (no data behind) 0x01 (more data behind)

3. Reading Mode

3.1 Batch Mode

In batch mode, MT82Ag starts scanning barcode when trigger pin = low. If trigger stays low, the scanning continues, with each barcode scanned once. To restart a new batch reading, the host must reset trigger level first and then pull trigger low again.

Batch Mode

3.2 Trigger Mode

In trigger mode, MT82Ag starts scanning barcode when trigger pin = low. If trigger stays low within LED timeout, the scanning continues. When trigger level is reset or LED timeout expires, the scanning stops. To restart scanning, the host must reset trigger level first and then pull trigger low again.

Trigger Mode

3.2.1 Trigger Condition

When trigger condition = level, the trigger pin must always stay low during a scanning operation. When trigger condition = pulse, MT82Ag starts scanning whenever a low level pulse at trigger pin is detected, and will continue scanning until a barcode is scanned or a pre-set timeout is reached.

Level*

Pulse

3.2.2 LED Timeout

LED timeout is the maximum scanning duration. When LED timeout expires, the scanning operation stops automatically. The configurable range is from 1000 to 3600000ms; default is 3000ms. Please refer to Appendix D for configuration method of **Set LED Timeout**.

3000ms*

5000ms

Set LED Timeout

3.2.3 Identical Read Interval

When identical read interval = 0ms, a barcode can be scanned only once. When identical read interval > 0ms, a barcode (or an identical one) can be re-scanned after the defined amount of interval expires. When identical read interval is enabled and identical read interval reset is disabled, a barcode (or an identical one) can be re-scanned only after the defined amount of interval expires. When identical read interval is enabled and identical read interval reset is enabled, a barcode (or an identical one) can be re-scanned only if it has not been scanned before the defined amount of interval expires.

Disable Identical Read Interval*

Enable Identical Read Interval

Disable Identical Read Interval reset*

Enable Identical Read Interval reset

The configurable range is from 0 to 65535ms; default is 1500ms. Please refer to Appendix D for configuration method of **Set Identical Read Interval**.

0ms

1000ms

1500ms*

3000ms

5000ms

Set Identical Read Interval

3.3 Auto-sensing Mode

In auto-sensing mode, MT82Ag automatically starts scanning barcode when image change is detected within its field of view. MT82Ag can still be triggered if trigger is pull low. When trigger level is reset or LED timeout expires, the scanning stops.

Auto-sensing Mode

3.3.1 LED Timeout

LED timeout is the maximum scanning duration. When LED timeout expires, the scanning operation stops automatically. The configurable range is from 1000 to 3600000ms; default is 3000ms. Please refer to Appendix D for configuration method of **Set LED Timeout**.

3000ms*

5000ms

Set LED Timeout

3.3.2 Identical Read Interval

When identical read interval = 0ms, a barcode can be scanned only once. When identical read interval > 0ms, a barcode (or an identical one) can be re-scanned after the defined amount of interval expires. When identical read interval is enabled and identical read interval reset is disabled, a barcode (or an identical one) can be re-scanned only after the defined amount of interval expires. When identical read interval is enabled and identical read interval reset is enabled, a barcode (or an identical one) can be re-scanned only if it has not been scanned before the defined amount of interval expires.

Disable Identical Read Interval*

Enable Identical Read Interval

Disable Identical Read Interval reset* **Enable Identical Read Interval reset**

The configurable range is from 0 to 65535ms; default is 1500ms. Please refer to Appendix D for configuration method of **Set Identical Read Interval**.

0ms

1000ms

1500ms*

3000ms

5000ms

Set Identical Read Interval

3.3.3 Image Stabilization Timeout

The configurable range is from 0 to 1600ms; default is 60ms. Please refer to Appendix D for configuration method of **Set Image Stabilization Timeout**.

60ms*

500ms

1000ms

Set Image Stabilization Timeout

3.3.4 Auto-sensing Sensitivity

Medium

Low

High*

Ultra High

Set Auto-sensing Threshold

The higher auto-sensing threshold is, the lower the sensitivity. The configurable range is from 1 to 50; default is 10. Please refer to Appendix D for configuration method of **Set Auto-sensing Threshold**.

3.4 Continuous Mode

In continuous mode, MT82Ag keeps scanning barcodes continuously.

Continuous Mode

3.4.1 LED Timeout

LED timeout is the maximum scanning duration. When LED timeout expires, the scanning operation stops automatically. The configurable range is from 1000 to 3600000ms; default is 3000ms. Please refer to Appendix D for configuration method of **Set LED Timeout**.

3000ms*

5000ms

Set LED Timeout

3.4.2 Scan Interval

Scan interval is the period of time between two consecutive scans. The configurable range is from 0 to 65535ms; default is 1000ms. Please refer to Appendix D for configuration method of **Set Scan Interval**.

500ms

1000ms*

2000ms

5000ms

0ms

Set Scan Interval

3.4.3 Identical Read Interval

When identical read interval = 0ms, a barcode can be scanned only once. When identical read interval > 0ms, a barcode (or an identical one) can be re-scanned after the defined amount of interval expires. When identical read

interval is enabled and identical read interval reset is disabled, a barcode (or an identical one) can be re-scanned only after the defined amount of interval expires. When identical read interval is enabled and identical read interval reset is enabled, a barcode (or an identical one) can be re-scanned only if it has not been scanned before the defined amount of interval expires.

Disable Identical Read Interval*

Enable Identical Read Interval

Disable Identical Read Interval reset*

Enable Identical Read Interval reset

The configurable range is from 0 to 65535ms; default is 1500ms. Please refer to Appendix D for configuration method of **Set Identical Read Interval**.

0ms

1000ms

1500ms*

3000ms

5000ms

Set Identical Read Interval

4. Illumination and Aimer

4.1 Illumination

Normal*

Always Off

Always On

4.2 Aimer

Normal*

Always Off

Always On

5. Indicator

5.1 General Settings

Mute

Unmute*

5.2 Power Up Beep

On*

Off

5.3 Good Read Beep

On*

Off

5.3.1 Indicator Beep Type

Type 1

Type 2

Type 3*

5.3.2 Beep Volume

High*

Medium

Low

5.4 Configuration Barcode Beep

On*

Off

5.5 Good Read LED and duration

On*

Off

100ms

200ms*

500ms

Set Good Read LED duration

The configurable range is from 0 to 3600000ms; default is 200ms. Please refer to Appendix D for configuration method of **Set Good Read LED duration**.

5.6 Not Good Read (NGR) Message

On

Off*

Set NGR Message

The NGR message can be 0 to 7 bytes of data, ranging from 00 to FF. Please refer to Appendix D for configuration method of **Set NGR Message**.

6. Data Format

Full data format can be either one of following:
[Code ID] + [Preamble] + [DATA] + [Postamble] + [Terminator]
[Preamble] + [Code ID] + [DATA] + [Postamble] + [Terminator]

By default Code ID, Preamble and Postamble are disabled; terminator is 0x0D (Carriage Return). If full data format is disabled, only DATA will be displayed. DATA can be further divided into [Start] + [Center] + [End] if the length of Start/End is defined.

6.1 General Settings

Enable Full Data Format*

Disable Full Data Format

6.2 Preamble + Code ID

Code ID + Preamble

Preamble + Code ID*

6.3 Preamble

6.3.1 Enable/Disable/Set Preamble

Enable Preamble

Disable Preamble*

Set Preamble

Preamble can be 0 to 16 bytes of data, ranging from 00 to FF. Please refer to Appendix D for configuration method of **Set Preamble**.

Example: to set Preamble as "CODE"

1. Convert "CODE" into Hex equivalent as 43, 4F, 44, 45
2. Scan **Set Preamble**
3. Scan **4**, **3**, **4**, **F**, **4**, **4**, **4**, **5** respectively from **8.1 Data 0~F**
4. Scan **Save Configuration** from **8.2 Save & Abort**

6.4 Code ID

6.4.1 Enable/Disable/Reset Code ID

Enable Code ID

Disable Code ID*

Reset All Code ID to Default

6.4.2 Set Code ID

Example: to set PDF417 Code ID as 'p'

1. Convert 'p' to Hex equivalent as 70
2. Scan **Set PDF417 Code ID**
3. Scan **7**, **0** respectively from **8.1 Data 0~F**
4. Scan **Save Configuration** from **8.2 Save & Abort**

Set PDF417 Code ID

Set Code128 Code ID

Set QR Code ID

Set Data Matrix Code ID

Set EAN-8 Code ID

Set EAN-13 Code ID

Set UPC-E0 Code ID

Set UPC-E1 Code ID

Set UPC-A Code ID

Set IATA 2/5 Code ID

Set Code39 Code ID

Set Code93 Code ID

Set Interleaved 2/5 Code ID

Set Codabar Code ID

Set Industrial 2/5 Code ID

Set Matrix 2/5 Code ID

Set Code11 Code ID

Set MSI Plessey Code ID

Set Micro QR Code ID

Set Code32 Code ID

Set ISBN Code ID

Set ISSN Code ID

Set Plessey Code ID

Set GS1 DataBar Code ID

Set GS1 DataBar Limited Code ID

Set GS1 DataBar Expanded Code ID

Set MicroPDF417 Code ID

6.5 Postamble

6.5.1 Enable/Disable Postamble

Enable Postamble

Disable Postamble*

6.5.2 Set Postamble

Set Postamble

Postamble can be 0 to 16 bytes of data, ranging from 00 to FF. Please refer to Appendix D for configuration method of **Set Postamble**.

Example: to set Preamble as "CODE"

1. Convert "CODE" into Hex equivalent as 43, 4F, 44, 45
2. Scan **Set Postamble**
3. Scan **4**, **3**, **4**, **F**, **4**, **4**, **4**, **5** respectively from **8.1 Data 0~F**
4. Scan **Save Configuration** from **8.2 Save & Abort**

6.6 Terminator

6.6.1 Enable/Disable Terminator

Enable Terminator*

Disable Terminator

6.6.2 Set Terminator

Terminator = 0x0D*

Terminator = 0x0D 0x0A

Set Terminator

Terminator can be 0 to 7 bytes of data, ranging from 00 to FF. Please refer to Appendix D for configuration method of **Set Terminator**.

Example: to set Terminator as 0x0D

1. Scan **Set Terminator**
2. Scan **0**, **D** respectively from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

6.7 Data

6.7.1 Data Output

DATA consists of three parts: [Start] + [Center] + [End]

Send DATA*

Send Start Only

Send End Only

Send Center Only

6.7.2 Data Length

Set Start Length

Set End Length

Start/End Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Start/End Length**.

Example: to set Start Length as 2

1. Convert 2 to Hex equivalent as 02
2. Scan **Set Start**
3. Scan **0**, **2** respectively from **8.1 Data 0~F**
4. Scan **Save Configuration** from **8.2 Save & Abort**

6.8 Encoding Format

Below configuration barcodes allow you to choose input data encoding format:

UTF8

BIG5

AUTO - BIG5 or UTF8

Below configuration barcodes allow you to choose output data encoding format:

UNICODE
(Word)

BIG5
(Notepad, Excel)

6.9 ECI mode

Enable ECI Mode*

Disable ECI Mode

7. Symbologies

7.1 General Settings

Enable All Symbologies

Disable All Symbologies

Enable All 1D Symbologies

Disable All 1D Symbologies

Enable All 2D Symbologies

Disable All 2D Symbologies

7.2 Inverse Barcode

Enable All Inverse Barcodes

Disable All Inverse Barcodes*

Enable All 1D Inverse Barcodes

Disable All 1D Inverse Barcodes*

Enable Inverse PDF417

Disable Inverse PDF417

Enable Inverse Data Matrix

Disable Inverse Data Matrix

Enable Inverse QR Code

Disable Inverse QR Code

7.3 Code128

7.3.1 Reset to Default

Reset Code128 to Default

7.3.2 Enable/Disable Code128

Enable Code128*

Disable Code128

7.3.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.4 EAN-8

7.4.1 Reset to Default

Reset EAN-8 to Default

7.4.2 Enable/Disable EAN-8

Enable EAN-8*

Disable EAN-8

7.4.3 Check Digit

Send Check Digit*

Not Send Check Digit

7.4.4 Supplement

Disable 2-digit Supplement*

Enable 2-digit Supplement

Disable 5-digit Supplement*

Enable 5-digit Supplement

7.5 EAN-13

7.5.1 Reset to Default

Reset EAN-13 to Default

7.5.2 Enable/Disable EAN-13

Enable EAN-13*

Disable EAN-13

7.5.3 Check Digit

Send Check Digit*

Not Send Check Digit

7.5.4 Supplement

Disable 2-digit Supplement*

Enable 2-digit Supplement

Disable 5-digit Supplement*

Enable 5-digit Supplement

7.5.5 EAN-13 to ISBN

Disable EAN-13 to ISBN*

Enable EAN-13 to ISBN

7.5.6 EAN-13 to ISSN

Disable EAN-13 to ISSN*

Enable EAN-13 to ISSN

7.6 UPC-E0

7.6.1 Reset to Default

Reset UPC-E0 to Default

7.6.2 Enable/Disable UPC-E0

Enable UPC-E0*

Disable UPC-E0

7.6.3 Check Digit

Send Check Digit*

Not Send Check Digit

7.6.4 System Number

Send System Number*

Not Send System Number

7.7 UPC-E1

7.7.1 Reset to Default

Reset UPC-E1 to Default

7.7.2 Enable/Disable UPC-E1

Enable UPC-E1*

Disable UPC-E1

7.7.3 Check Digit

Send Check Digit*

Not Send Check Digit

7.7.4 System Number

Send System Number*

Not Send System Number

7.7.5 Supplement

Disable 2-digit Supplement*

Enable 2-digit Supplement

Disable 5-digit Supplement*

Enable 5-digit Supplement

7.8 UPC-A

7.8.1 Reset to Default

Reset UPC-A to Default

7.8.2 Enable/Disable UPC-A

Enable UPC-A*

Disable UPC-A

7.8.3 UPC-A to EAN-13

Disable UPC-A to EAN-13*

Enable UPC-A to EAN-13

7.8.4 Check Digit

Send Check Digit*

Not Send Check Digit

7.8.5 System Number

Send System Number*

Not Send System Number

7.8.6 Supplement

Disable 2-digit Supplement*

Enable 2-digit Supplement

Disable 5-digit Supplement*

Enable 5-digit Supplement

7.9 Interleaved 2/5

7.9.1 Reset to Default

Reset Interleaved 2/5 to Default

7.9.2 Enable/Disable Interleaved 2/5

Enable Interleaved 2/5*

Disable Interleaved 2/5

7.9.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.9.4 Verification

Disable Verification*

Enable Verification
Not Send Check Digit

Enable Verification
Send Check Digit

7.10 Matrix 2/5

7.10.1 Reset to Default

Reset Matrix 2/5 to Default

7.10.2 Enable/Disable Matrix 2/5

Enable Matrix 2/5

Disable Matrix 2/5*

7.10.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.10.4 Verification

Disable Verification*

Enable Verification
Not Send Check Digit

Enable Verification
Send Check Digit

7.11 Industrial 2/5

7.11.1 Reset to Default

Reset Industrial 2/5 to Default

7.11.2 Enable/Disable Industrial 2/5

Enable Industrial 2/5

Disable Industrial 2/5*

7.11.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length **Set Max Length**

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.11.4 Verification

Disable Verification*

Enable Verification
Not Send Check Digit

Enable Verification
Send Check Digit

7.12 IATA 2/5

7.12.1 Reset to Default

Reset IATA 2/5 to Default

7.12.2 Enable/Disable IATA 2/5

Enable IATA 2/5

Disable IATA 2/5*

7.12.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.12.4 Verification

Disable Verification*

Enable Verification
Not Send Check Digit

Enable Verification
Send Check Digit

7.13 Code39

7.13.1 Reset to Default

Reset Code39 to Default

7.13.2 Enable/Disable Code39

Enable Code39*

Disable Code39

7.13.3 Send Start & Stop

Send Start & Stop

Not Send Start & Stop

7.13.4 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.13.5 Verification

Disable Verification*

Enable Verification Not Send Check Digit

Enable Verification Send Check Digit

7.13.6 Enable/Disable Code32

Disable Code32*

Enable Code32

7.13.7 Full ASCII Code39

Enable Full ASCII Code39

Disable Full ASCII Code39*

7.14 Codabar

7.14.1 Reset to Default

Reset Codabar to Default

7.14.2 Enable/Disable Codabar

Enable Codabar*

Disable Codabar

7.14.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.14.4 Verification

Disable Verification*

Mod10 Verification

Mod10 Verification

Send Check Digit

Not Send Check Digit

Mod16 Verification
Send Check Digit

Mod16 Verification
Not Send Check Digit

7.14.5 Send Start & Stop

Not Send Start & Stop*

Start & Stop = ABCD/ABCD*

Start & Stop = ABCD/TN*E

Start & Stop = abcd/abcd

Start & Stop = abcd/tn*e

7.15 Code93

7.15.1 Reset to Default

Reset Code93 to Default

7.15.2 Enable/Disable Code93

Enable Code93*

Disable Code93

7.15.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.16 Code11

7.16.1 Reset to Default

Reset Code11 to Default

7.16.2 Enable/Disable Code11

Enable Code11

Disable Code11*

7.16.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length **Set Max Length**

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.17 MSI Plessey

7.17.1 Reset to Default

Reset MSI Plessey to Default

7.17.2 Enable/Disable MSI Plessey

Enable MSI Plessey

Disable MSI Plessey*

7.17.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.18 GS1 DataBar

Enable GS1 DataBar

Disable GS1 DataBar*

7.19 GS1 DataBar Limited

Enable GS1 DataBar Limited

Disable GS1 DataBar Limited*

7.20 GS1 DataBar Expanded

Enable GS1 DataBar Expanded

Disable GS1 DataBar Expanded*

7.21 Plessey

7.21.1 Reset to Default

Reset Plessey to Default

7.21.2 Enable/Disable Plessey

Enable Plessey

Disable Plessey*

7.21.3 Min/Max Length

Min Length = 00*

Min Length = 04

Max Length = 32

Max Length = 255*

Set Min Length

Set Max Length

Min/Max Length can be 0 to 255 digits, converted into 00 to FF during configuration. Please refer to Appendix D for configuration method of **Set Min/Max Length**.

7.21.4 Check Digit

Send Check Digit

Not Send Check Digit*

7.22 PDF417

Enable PDF417*

Disable PDF417

7.23 MicroPDF417

Enable MicroPDF417

Disable MicroPDF417*

7.24 QR Code

Enable QR Code*

Disable QR Code

7.25 Micro QR Code

Enable Micro QR Code

Disable Micro QR Code*

7.26 Data Matrix

Enable Data Matrix*

Disable Data Matrix

7.27 Aztec

Enable Aztec

Disable Aztec*

8. Configuration Barcode

8.1 Data 0~F

0

1

2

3

4

5

6

7

8

9

A

B

C

D

E

F

8.2 Save & Abort

If there is an error reading data barcode during configuration, you may cancel 1/all data by scanning below configuration barcodes.

For example, barcode data '1', '2' ,'3' have been scanned respectively during configuration. If you want to cancel '3', scan **Abort 1 Data**. If you want to cancel '123', scan **Abort All Data**. Alternatively you may scan **Abort Configuration** to cancel the whole configuration process.

Save Configuration

Abort 1 Data

Abort All Data

Abort Configuration

Appendix

Appendix A - Default Table

Function		Default	Remark
Barcode Configurability		Enable	
Config Barcode Data Output		Disable	
Interface		USB HID	
UART	Baud Rate	9600	
	Parity	None	
	Data Bits	8	
	Stop Bit	1	
	Flow Control	None	
USB HID	Keyboard Layout	English (USA)	
	Intercharacter Delay	2ms	
	Polling Rate	1ms	
	Alt Code	Disable	
	Control Mode	Off	
	Capslock Mode	Off	
Reading Mode		Trigger Mode	
Trigger Mode	LED Timeout	3000ms	Range: 1000~3600000ms
	Trigger Condition	Level	
	Identical Read Interval	Disable	
	Identical Read Interval Reset	Disable	
	Set Identical Read Interval	1500ms	
Auto-sensing Mode	LED Timeout	3000ms	Range: 1000~3600000ms
	Image Stabilization TImeout	60ms	Range: 0~1600ms
	Identical Read Interval	Disable	
	Identical Read Interval Reset	Disable	
	Set Identical Read Interval	1500ms	Range: 0~65535ms

	Auto-sensing Threshold	10	Range: 1~50
Continuous Mode	LED Timeout	3000ms	Range: 1000~3600000ms
	Scan Interval	1000ms	Range: 0~65535ms
	Identical Read Interval	Disable	
	Identical Read Interval Reset	Disable	
	Set Identical Read Interval	1500ms	Range: 0~65535ms
Illumination		Normal	
Aimer		Normal	
Power Up Beep		Enable	
Good Read	Beep	Enable	
	Indicator Beep Type	Type 3	
	Beep Volume	High	
Configuration Barcode Beep		Enable	
Good Read LED		Enable	
NGR	On/Off	Off	
	Message	None	
Preamble + Code ID		Preamble + Code ID	
Preamble		Disable	
Set Preamble		None	
Code ID		Disable	
Postamble		Disable	
Set Postamble		None	
Terminator		Enable	
Set Terminator		0x0D	
Data Output		Send Data	
Data Length		0	Range: 0~255
Encoding Format		GBK	
ECI Mode		Enable	
Code128			
Enable/Disable		Enable	
Max Length		255	
Min Length		0	
EAN-8			
Enable/Disable		Enable	

Check Digit	Send	
2-digit Supplement	Disable	
5-digit Supplement	Disable	
EAN-13		
Enable/Disable	Enable	
Check Digit	Send	
2-digit Supplement	Disable	
5-digit Supplement	Disable	
EAN13 to ISBN	Disable	
EAN13 to ISSN	Disable	
UPC-E0		
Enable/Disable	Enable	
Check Digit	Send	
System Number	Send	
UPC-E1		
Enable/Disable	Enable	
Check Digit	Send	
System Number	Send	
2-digit Supplement	Disable	
5-digit Supplement	Disable	
UPC-A		
Enable/Disable	Enable	
UPCA to EAN13	Disable	
Check Digit	Send	
2-digit Supplement	Disable	
5-digit Supplement	Disable	
System Number	Send	
Interleaved 2/5		
Enable/Disable	Enable	
Verification	Disable	
Check Digit	Not Send	
Max Length	255	
Min Length	0	
Matrix 2/5		
Enable/Disable	Disable	
Verification	Disable	

Check Digit	Not Send	
Max Length	255	
Min Length	0	
Industrial 2/5		
Enable/Disable	Disable	
Verification	Disable	
Check Digit	Not Send	
Max Length	255	
Min Length	0	
IATA 2/5		
Enable/Disable	Disable	
Verification	Disable	
Check Digit	Not Send	
Max Length	255	
Min Length	0	
Code39		
Enable/Disable	Enable	
Verification	Disable	
Check Digit	Not Send	
Start & Stop	Not Send	
Full ASCII Code39	Disable	
Code32	Disable	
Max Length	255	
Min Length	0	
Codabar		
Enable/Disable	Enable	
Verification	Disable	
Check Digit	Not Send	
Start & Stop	Not Send	
Start & Stop Type	ABCD/ABCD	
Max Length	255	
Min Length	0	
Code93		
Enable/Disable	Enable	
Max Length	255	
Min Length	0	

Code11		
Enable/Disable	Disable	
Max Length	255	
Min Length	0	
MSI Plessey		
Enable/Disable	Disable	
Max Length	255	
Min Length	0	
GS1 DataBar		
Enable/Disable	Disable	
GS1 DataBar Limited		
Enable/Disable	Disable	
GS1 DataBar Expanded		
Enable/Disable	Disable	
Plessey		
Enable/Disable	Disable	
Max Length	255	
Min Length	0	
Check Digit	Not Send	
PDF417		
Enable/Disable	Enable	
MicroPDF417		
Enable/Disable	Disable	
QR Code		
Enable/Disable	Enable	
Micro QR Code		
Enable/Disable	Disable	
Data Matrix		
Enable/Disable	Enable	
Aztec		
Enable/Disable	Disable	

Appendix B - Code ID

Symbology	Code ID
Code128	j
EAN-8	d
EAN-13	d
UPC-E0	c
UPC-E1	c
UPC-A	c
Interleaved 2/5	e
Matrix 2/5	v
Industrial 2/5	D
IATA 2/5	s
Code39	b
Codabar	a
Code93	i
PDF417	r
QR Code	Q
Data Matrix	u
Code 11	H
MSI Plessey	J
Micro QR Code	Q
Code32	b
ISBN	d
ISSN	d
Aztec	z
GS1 DataBar	R
GS1 DataBar Limited	R
GS1 DataBar Expanded	R
Plessey	p
MicroPDF417	s

Appendix C - ASCII Table

Hex	Dec	ASCII	
00	0	NUL	(Null char.)
01	1	SOH	(Start of Header)
02	2	STX	(Start of Text)
03	3	ETX	(End of Text)
04	4	EOT	(End of Transmission)
05	5	ENQ	(Enquiry)
06	6	ACK	(Acknowledgment)
07	7	BEL	(Bell)
08	8	BS	(Backspace)
09	9	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)(DeviceControl1)
12	18	DC2	(DeviceControl2)
13	19	DC3	(XOFF)(DeviceControl3)
14	20	DC4	(DeviceControl4)
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)

Appendix D - Configuration Method

LED Timeout

Example: to set LED Timeout as 1500ms

1. Scan **Set LED Timeout**
2. Scan **1**, **5**, **0**, **0** respectively from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

Image Stabilization Timeout

Example: to set Image Stabilization Timeout as 500ms

1. Scan **Set Image Stabilization Timeout**
2. Scan **5**, **0**, **0** respectively from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

Identical Read Interval

Example: to set Identical Read Interval as 1000ms

1. Scan **Set Identical Read Interval**
2. Scan **1**, **0**, **0**, **0** respectively from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

Auto-sensing Threshold

Example: to set Auto-sensing Threshold as 4

1. Scan **Set Auto-sensing Threshold**
2. Scan **4** from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

Scan Interval

Example: to set Scan Interval as 500ms

1. Scan **Set Scan Interval**
2. Scan **5**, **0**, **0** respectively from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

Preamble/Postamble

Example: to set Preamble/Postamble as "CODE"

1. Convert "CODE" into Hex equivalent as 43, 4F, 44, 45
2. Scan **Set Preamble**
3. Scan **4**, **3**, **4**, **F**, **4**, **4**, **4**, **5** respectively from **8.1 Data 0~F**
4. Scan **Save Configuration** from **8.2 Save & Abort**

Terminator

Example: to set Terminator as 0x0D

1. Scan **Set Terminator**
2. Scan **0**, **D** respectively from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

Code ID

Example: to set PDF417 Code ID as 'p'

1. Convert 'p' to Hex equivalent as 70
2. Scan **Set PDF417 Code ID**
3. Scan **7**, **0** respectively from **8.1 Data 0~F**
4. Scan **Save Configuration** from **8.2 Save & Abort**

NGR (Not Good Read) Message

Example: to set NGR Message as '!ERR'

1. Convert '!ERR' to Hex equivalent as 21, 45, 52, 52
2. Scan **Set NGR Message**
3. Scan **2**, **1**, **4**, **5**, **5**, **2**, **5**, **2** respectively from **8.1 Data 0~F**
4. Scan **Save Configuration** from **8.2 Save & Abort**

Min/Max Length

Example: to set Min Length as 8 and set Max Length as 12

1. Scan **Set Min Length**
2. Scan **8** from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

4. Scan **Set Max Length**
5. Scan **1**, **2** respectively from **8.1 Data 0~F**
6. Scan **Save Configuration** from **8.2 Save & Abort**

Intercharacter Delay

Example: to set Intercharacter Delay as 15ms

1. Scan **Set Intercharacter Delay**
2. Scan **1**, **5** respectively from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

Good Read LED Duration

Example: to set Intercharacter Delay as 200ms

1. Scan **Good Read LED Duration**
2. Scan **2**, **0**, **0** respectively from **8.1 Data 0~F**
3. Scan **Save Configuration** from **8.2 Save & Abort**

Appendix E – Control Code Table

Hex	Dec	Key Code (Ctrl Mode Off)	Key Code (Ctrl Mode On)
00	0	Null	Ctrl+2
01	1	Keypad Enter	Ctrl+A
02	2	Caps Lock	Ctrl+B
03	3	Null	Ctrl+C
04	4	Null	Ctrl+D
05	5	Null	Ctrl+E
06	6	Null	Ctrl+F
07	7	Enter	Ctrl+G
08	8	Left Arrow	Ctrl+H
09	9	Horizontal Tab	Ctrl+I
0a	10	Down Arrow	Ctrl+J
0b	11	Vertical Tab	Ctrl+K
0c	12	Backspace	Ctrl+L
0d	13	Enter	Ctrl+M
0e	14	Insert	Ctrl+N
0f	15	Esc	Ctrl+O
10	16	F11	Ctrl+P
11	17	Home	Ctrl+Q
12	18	Print Screen	Ctrl+R
13	19	Delete	Ctrl+S
14	20	tab+shift	Ctrl+T
15	21	F12	Ctrl+U
16	22	F1	Ctrl+V
17	23	F2	Ctrl+W
18	24	F3	Ctrl+X
19	25	F4	Ctrl+Y
1A	26	F5	Ctrl+Z
1B	27	F6	Ctrl+[
1C	28	F7	Ctrl+\
1D	29	F8	Ctrl+]
1E	30	F9	Ctrl+6
1F	31	F10	Ctrl+_

Version History

Rev	Date	Description	Issued
1.0	2020.10.12	Initial Release	Shaw
1.1	2020.12.18	Secondary Revision	Shaw
1.2	2021.02.04	Revised Preamble/Postamble	Shaw
1.3	2021.03.11	Added BIG5	Shaw
1.4	2021.04.07	Added Aztec	Shaw
1.5	2022.02.08	Added Aztec Code ID	Shaw
1.6	2022.07.07	Updated Inverse Barcode	Shaw
1.7	2022.08.26	Updated Keyboard Layout Added Alt Code, Control Mode and Capslock Mode Added Appendix E - Control Code Table	Shaw
1.8	2022.10.23	Added Plessey, GS1 DataBar, MicroPDF417	Shaw
1.9	2023.05.11	Updated Appendix D	Shaw

Marson Technology Co., Ltd.
9F., 108-3, Minquan Rd., Xindian Dist., New Taipei City, Taiwan
TEL: 886-2-2218-1633
FAX: 886-2-2218-6638
E-mail: info@marson.com.tw
Web: www.marson.com.tw