marson

MT581W

2D Ring Scanner

User's Manual

V 1.1

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Chapter 1 Getting Started

Introduction

MT581W 2D Ring Scanner, provides hands-free freedom to user who needs to perform multi-tasks while always on the move. Drawing very little power from the host device, MT581W ensures that the connected mobile terminal can operate for a full shift with single charge.

Barcode Programming

MT581W can be configured by scanning programming barcodes. All user programmable features/options are described along with their programming barcodes/commands in the following sections.

This programming method is most straightforward. However, it requires manually scanning barcodes. As a result, errors are more likely to occur.

Programming Barcode/ Programming Command/Function

The figure above is an example that shows you the programming barcode and command for the Enter Setup function:

1. The **No Case Conversion** barcode.

2. The **No Case Conversion** command.

3. The description of feature/option.

4. ** indicates factory default settings.

@SETUPE1

Enter Setup

Use of Programming Barcodes

Scanning the **Enter Setup** barcode can enable MT581W to enter the setup mode. Then you can scan a number of programming barcodes to configure your engine. To exit the setup mode, scan the **Exit Setup** barcode or a non-programing barcode, or reboot MT581W.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Programming barcode data (i.e. the characters under programming barcode) can be transmitted to the host device. Scan the appropriate barcode below to enable or disable the transmission of programming barcode data to the host device.

@SETUPT0

**** Do Not Transmit Programming Barcode Data**

@SETUPT1

Transmit Programming Barcode Data

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Internal Illumination

A couple of illumination options are provided to improve the lighting conditions during every image capture:

Normal: Illumination LEDs on MT581W are turned on during image capture. **Always**

On: Illumination LEDs on MT581W keep on after MT581W is powered on. **Off:**

Illumination LEDs on MT581W are off all the time.

@ILLSCN1
**** Normal**

@ILLSCN0
Off

@ILLSCN2
Always On

@SETUPE0
**** Exit Setup**

@SETUPE1
Enter Setup

Aiming

When scanning/capturing image, MT581W projects an aiming pattern which allows positioning the target barcode within its field of view and thus makes decoding easier.

Normal: MT581W projects an aiming pattern only during barcode scanning/capture.

Always On: Aiming pattern is constantly on after MT581W is powered on.

Off: Aiming pattern is off all the time.

@AMLENA1
**** Normal**

@AMLENA0
Off

@AMLENA2
Always On

Good Read LED

The LED can be programmed to be On or Off to indicate good read.

@GRLENA1
**** On**

@GRLENA0
Off

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Good Read LED Duration

This parameter sets the amount of time that the Good Read LED to remain on following a good read. It is programmable in 1ms increments from 1ms to 2,500ms.

@GRLDUR20

**** Short (20ms)**

@GRLDUR120

Medium (120ms)

@GRLDUR220

Long (220ms)

@GRLDUR320

Prolonged (320ms)

@GRLDUR

Custom (1 - 10000ms)

Example

Set the Good Read LED duration to 800ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom** barcode.
3. Scan the numeric barcodes “8”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Power On Beep

MT581W can be programmed to beep when it is powered on. Scan the **Off** barcode if you do not want a power on beep.

@PWBENA1
**** On**

@PWBENA0
Off

Good Read Beep

Scanning the **Off** barcode can turn off the beep that indicates successful decode; scanning the **On** barcode can turn it back on.

@GRBENA1
**** On**

@GRBENA0
Off

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Good Read Beep Duration

This parameter sets the length of the beep MT581W emits on a good read. It is programmable in 1ms increments from 20ms to 300ms.

@GRBDUR40

Short (40ms)

@GRBDUR80

**** Medium (80ms)**

@GRBDUR120

Long (120ms)

@GRBDUR

Custom (20 – 300ms)

Example

Set the Good Read Beep duration to 200ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom** barcode.
3. Scan the numeric barcodes “2”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Good Read Beep Frequency

This parameter is programmable in 1Hz increments from 20Hz to 20,000Hz.

@GRBFRQ800
Extra Low (800Hz)

@GRBFRQ1600
Low (1600Hz)

@GRBFRQ2730
Medium (2730Hz)

@GRBFRQ4200
**** High (4200Hz)**

@GRBFRQ
Custom (20 - 20,000Hz)

Example

Set the Good Read Beep frequency to 2,000Hz:

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom** barcode.
3. Scan the numeric barcodes “2”, “0”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Good Read Beep Volume

There are 20 volume levels to choose from. The bigger the value, the louder the Good Read Beep.

@GRBVLL20

**** Loud**

@GRBVLL8

Medium

@GRBVLL5

Low

@GRBVLL

Custom Volume (Level 1-20)

Example

Set the Good Read Beep volume to Level 8:

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Volume** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Scan Mode

Level Mode: A trigger pull activates a decode session. The decode session continues until a barcode is decoded or you release the trigger.

Sense Mode: MT581W activates a decode session every time it detects a barcode presented to it. The decode session continues until a barcode is decoded or the decode session timeout expires. **Reread Timeout** can avoid undesired rereading of same barcode in a given period of time. **Sensitivity** can change the Sense Mode's sensibility to changes in images captured. **Image Stabilization Timeout** gives MT581W time to adapt to ambient environment after it decodes a barcode and "looks" for another.

Continuous Mode: MT581W automatically starts one decode session after another. To suspend/resume barcode reading, simply press the trigger. **Reread Timeout** can avoid undesired rereading of same barcode in a given period of time. Note that when switching to this mode by scanning the **Continuous Mode** barcode, MT581W will stop barcode reading for 3 seconds before starting scanning continuously.

Pulse Mode: When the trigger is pulled and released, scanning is activated until a barcode is decoded or the decode session timeout expires (The decode session timeout begins when the trigger is released).

Batch Mode: A trigger pull activates a round of multiple decode sessions. This round of multiple scans continues until you release the trigger. Rereading the same barcode is not allowed in the same round.

@SCNMOD0
**** Level Mode**

@SCNMOD2
Sense Mode

@SCNMOD3
Continuous Mode

@SCNMOD4
Pulse Mode

@SCNMOD7
Batch Mode

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1ms increments from 1ms to 3,600,000ms. The default setting is 3,000ms. Do not set timeout to less than 200 to avoid malfunction.

@ORTSET

Decode Session Timeout

Example

Set the decode session timeout to 1,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes “1”, “5”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Image Stabilization Timeout (Sense Mode)

This parameter defines the amount of time MT581W will spend adapting to ambient environment after it decodes a barcode and “looks” for another. It is programmable in 1ms increments from 0ms to 3,000ms. The default setting is 500ms.

@SENIST

Image Stabilization Timeout

Example

Set the image stabilization timeout to 800ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Image Stabilization Timeout** barcode.
3. Scan the numeric barcodes “8”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Reread Timeout

Reread Timeout can avoid undesired rereading of same barcode in a given period of time. This feature is only applicable to the Sense and Continuous modes.

Enable Reread Timeout: Do not allow MT581W to reread same barcode before the reread timeout expires.

Disable Reread Timeout: Allow MT581W to reread same barcode.

@RRDENA1

Enable Reread Timeout

@RRDENA0

**** Disable Reread Timeout**

The following parameter sets the time interval between two successive reads on same barcode. It is programmable in 1ms increments from 0ms to 3,600ms. When it is set to a value greater than 3,000, the timeout for rereading same programming barcode is limited to 3,000ms. The default setting is 1500ms.

@RRDDUR

Set Reread Timeout

Example

Set the reread timeout to 1,000ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Reread Timeout** barcode.
3. Scan the numeric barcodes “1”, “0”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

You may wish to restart the reread timeout when MT581W encounters the same barcode that was decoded in the last scan session before the reread timeout expires. To enable this feature, scan the **Reread Timeout Reset On** barcode. This feature is only effective when **Reread Timeout** is enabled.

@RRDREN1
Reread Timeout Reset On

@RRDREN0
**** Reread Timeout Reset Off**

Image Decoding Timeout

Image Decoding Timeout specifies the maximum time MT581W will spend decoding an image. This parameter is programmable in 1ms increments from 1ms to 3,000ms. The default timeout is 500ms. Do not set timeout to less than 50 to avoid malfunction.

@DETSET
Image Decoding Timeout

Example

Set the image decoding timeout to 1,000ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Image Decoding Timeout** barcode.
3. Scan the numeric barcodes “1”, “0”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Good Read Delay

Good Read Delay sets the minimum amount of time before MT581W can read another barcode. This parameter is programmable in 1ms increments from 1ms to 3,600,000ms. The default setting is 500ms. Scan the appropriate barcode below to enable or disable the delay.

@GRDENA1

Enable Good Read Delay

@GRDENA0

**** Disable Good Read Delay**

To set the good read delay, scan the barcode below, then set the delay (from 1 to 3,600,000ms) by scanning the digit barcode(s) then scanning the **Save** barcode from the Appendix.

@GRDDUR

Good Read Delay

Example

Set the good read delay to 1,000ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Good Read Delay** barcode.
3. Scan the numeric barcodes “1”, “0”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Sensitivity (Sense Mode)

Sensitivity specifies the degree of acuteness of MT581W's response to changes in images captured. There are 20 levels to choose from. The smaller the value, the higher the sensitivity and the lower requirement in image change to trigger MT581W. You can select an appropriate degree of sensitivity that fits the application environment. This feature is only applicable to the Sense mode.

@SENLVL14
Low Sensitivity

@SENLVL11
Medium Sensitivity

@SENLVL8
High Sensitivity

@SENLVL5
**** Enhanced Sensitivity**

@SENLVL
Custom Sensitivity (Level 1-20)

Example

Set the sensitivity to Level 10:

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Sensitivity** barcode.
3. Scan the numeric barcodes "1" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0
**** Exit Setup**

@SETUPE1
Enter Setup

Surround GS1 Application Identifiers (AI's) with Parentheses

When **Surround GS1 AI's with Parentheses** is selected, each application identifier (AI) contained in scanned data will be enclosed in parentheses in the output message.

@GS1AIP0
**** Do Not Surround GS1 AI's with Parentheses**

@GS1AIP1
Surround GS1 AI's with Parentheses

@SETUPE0
**** Exit Setup**

Example

(01) 0 0614141 99999 6 (10) 10ABCEDF123456

If **Surround GS1 AI's with Parentheses** is selected, the barcode above is output as (01)00614141999996(10)10ABCEDF123456.

If **Do Not Surround GS1 AI's with Parentheses** is selected, the barcode above is output as 0100614141999996101 0ABCEDF123456.

@SETUPE1

Enter Setup

Scanning Preference

Normal Mode: Select this mode when reading barcodes on paper.

Screen Mode: Select this mode when reading barcodes on the screen.

Barcode Pay Mode: Select this mode when reading barcodes to perform payment transactions, such as Alipay, WeChat Pay barcodes.

@EXPLVL0

**** Normal Mode**

@EXPLVL2

Screen Mode

@EXPLVL5

Barcode Pay Mode

Decode Area

Whole Area Decoding: MT581W attempts to decode barcode(s) within its field of view, from the center to the periphery, and transmits the barcode that has been first decoded.

Acuread Decoding: MT581W only decodes the barcode aimed squarely by the aiming pattern. For those using a crosshair aiming pattern, only the barcode aimed by the center of crosshair will be decoded.

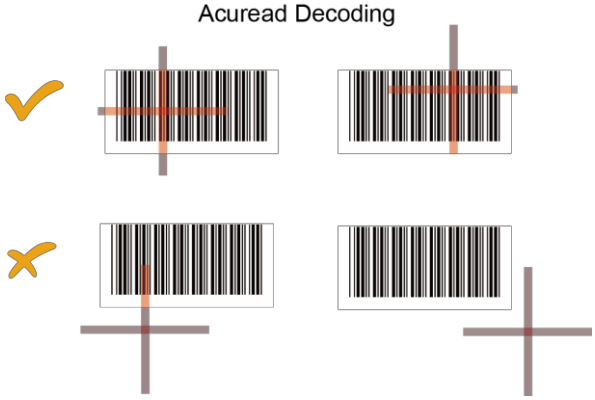
@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Acuread Decoding



@CADENA0

**** Whole Area Decoding**

@CADENA2

Acuread Decoding

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Operating Modes

Auto Sleep

Auto Sleep allows MT581W to automatically enter the sleep mode if no operation or communication is performed for a time period (user programmable). Sending trigger signal can awake MT581W.

@ATSENA0

**** Disable Auto Sleep**

@ATSENA1

Enable Auto Sleep

The following parameter sets how long MT581W remains idle (no operation or communication occurs) before it is put into sleep mode. It is programmable in 1s increments from 1s to 36000s. The default setting is 15s.

@ATSDUR

Time Period from Idle to Sleep

Example

Set the time period from idle to sleep to 1,000s:

1. Scan the **Enter Setup** barcode.
2. Scan the **Time Period from Idle to Sleep** barcode.
3. Scan the numeric barcodes “1”, “0”, “0” and “0” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Default Settings

Factory Defaults

Scanning the following barcode can restore MT581W to the factory defaults.

You may need to reset all parameters to the factory defaults when:

- ✧ MT581W is not properly configured so that it fails to decode barcodes.
- ✧ you forget previous configuration and want to avoid its impact.

@CUSDEF

Restore All Factory Defaults

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Query Product Information

@QRYFWV

Query Firmware Version

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Chapter 2 USB Interface

Introduction

There are four options for USB connection:

- ✧ USB HID Keyboard: MT581W's transmission is simulated as USB keyboard input with no need for command configuration or a driver. Barcode data could be entered by the virtual keyboard directly and it is also convenient for the host device to receive data.
- ✧ USB CDC: It is compliant with the standard USB CDC class specifications defined by the USB-IF and allows the host device to receive data in the way as a serial port does. A driver is needed when using this feature.
- ✧ HID POS (POS HID Barcode Scanner): It is based on the HID interface, with no need for a custom driver. It excels virtual keyboard and traditional TTL-232 interface in transmission speed.
- ✧ IBM SurePOS: It conforms to IBM (now Toshiba Global Commerce Solutions) 4698 USB scanner interface specifications.

When MT581W is connected to both USB and TTL-232 ports on a host device, it will select the USB connection by default.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

USB HID Keyboard

When MT581W is connected to the USB port on a host device, you can enable the USB HID Keyboard feature by scanning the barcode below. Then engine's transmission will be simulated as USB keyboard input. The Host receives keystrokes on the virtual keyboard. It works on a Plug and Play basis and no driver is required.

@INTERF3

**** USB HID Keyboard**

If the host device allows keyboard input, then no extra software is needed for HID Keyboard input.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

USB Country Keyboard Types

Keyboard layouts vary from country to country. The default setting is U.S. keyboard.

@KBWCTY0
**** U.S. (English)**

@KBWCTY1
Belgium

@KBWCTY2
Brazil

@KBWCTY3
Canada (French)

@KBWCTY4
Czechoslovakia

@KBWCTY5
Denmark

@KBWCTY6
Finland (Swedish)

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

@KBWCTY7

France

@KBWCTY8

Germany/ Austria

@KBWCTY9

Greece

@KBWCTY10

Hungary

@KBWCTY11

Israel (Hebrew)

@KBWCTY12

Italy

@KBWCTY13

Latin America/ South America

@KBWCTY14

Netherlands (Dutch)

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

@KBWCTY15

Norway

@KBWCTY16

Poland

@KBWCTY17

Portugal

@KBWCTY18

Romania

@KBWCTY19

Russia

@KBWCTY21

Slovakia

@KBWCTY22

Spain

@KBWCTY23

Sweden

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

@KBWCTY24

Switzerland (German)

@KBWCTY25

Turkey_F

@KBWCTY26

Turkey_Q

@KBWCTY27

UK

@KBWCTY28

Japan

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Beep on Unknown Character

Due to the differences in keyboard layouts, some characters contained in barcode data may be unavailable on the selected keyboard. As a result, MT581W fails to transmit the unknown characters.

Scan the appropriate barcode below to enable or disable the emission of beep when an unknown character is detected.

@KBWBUC0
**** Do Not Beep on Unknown Character**

@KBWBUC1
Beep on Unknown Character

Example

Supposing French keyboard (Country Code: 7) is selected and barcode data ”AÐF” is being dealted with, the keyboard will fail to locate the “Ð” (0xD0) character and MT581W will ignore the character and continue to process the next one.

Do Not Beep on Unknown Character: MT581W does not beep and the Host receives “AF”.

Beep on Unknown Character: MT581W beeps and the Host still receives “AF”.

If **Emulate ALT+Keypad ON** is selected, **Beep on Unknown Character** does not function.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Emulate ALT+Keypad

When **Emulate ALT+Keypad** is turned on, ASCII characters (0x20 - 0xFF) are sent over the numeric keypad no matter which keyboard type is selected.

1. ALT Make
2. Enter the number corresponding to a desired character on the keypad.
3. ALT Break

After **Emulate ALT+Keypad ON** is selected, you need to choose the code page with which the barcodes were created and to turn **Unicode Encoding** On or Off depending on the encoding used by the application software.

@KBWALT0

**** Emulate ALT+Keypad OFF**

@KBWALT1

Emulate ALT+Keypad ON

Since sending a character involves multiple keystroke emulations, this method appears less efficient.

Supposing **Emulate ALT+Keypad** is ON, **Unicode Encoding** is Off, **Code Page 1252 (West European Latin)** is selected, and **Emulate Keypad with Leading Zero** is Off, barcode data ”AÐF” (65/208/70) is sent as below:

“A” – “ALT Make” + “065” + “ALT Break”

“Ð” -- “ALT Make” + “208” + “ALT Break”

“F” -- “ALT Make” + “070” + “ALT Break”

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the barcode being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, select the code page with which the barcodes were created by scanning the appropriate barcode below. For PDF417, QR Code, Aztec and Data Matrix, besides setting the code page, you also need to set the character encoding in the “Character Encoding” section in Chapter 3. This feature is only effective when **Emulate ALT+Keypad** is turned on.

Note: Code Page 932, Code Page 936 and Code Page 950 are selectable and respectively supported by different software versions.

@KBWCPG0
**** Code Page 1252 (West European Latin)**

@KBWCPG1
Code Page 1251 (Cyrillic)

@KBWCPG2
Code Page 1250 (Central and East European Latin)

@KBWCPG3
Code Page 1253 (Greek)

@KBWCPG4
Code Page 1254 (Turkish)

@KBWCPG5
Code Page 1255 (Hebrew)

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

@KBWCPG6

Code Page 1256 (Arabic)

@KBWCPG7

Code Page 1257 (Baltic)

@KBWCPG8

Code Page 1258 (Vietnamese)

@KBWCPG11

Code Page 874 (Thai)

@KBWCPG10

Code Page 950 (Traditional Chinese, Big5)

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Unicode Encoding

Different host program may use different character encodings for handling incoming barcode data. For instance, Microsoft Office Word uses Unicode encoding and therefore you should turn **Unicode Encoding** on, whereas Microsoft Office Excel or Notepad uses Code Page encoding and therefore you should turn **Unicode Encoding** off. This feature is only effective when **Emulate ALT+Keypad** is turned on.

@KBWCPU0
**** Off**

@KBWCPU1
On

Emulate Keypad with Leading Zero

You may turn this feature on to send character sequences sent over the numeric keypad as ISO characters which have a leading zero. For example, ASCII A transmits as “ALT MAKE” 0065 “ALT BREAK”. This feature is only effective when **Emulate ALT+Keypad** is enabled.

@KBWALZ1
**** On**

@KBWALZ0
Off

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Function Key Mapping

When **Ctrl+ASCII Mode** is selected, function characters (0x00 - 0x1F) are sent as ASCII sequences.

@KBWFKM0

**** Disable**

@KBWFKM1

Ctrl+ASCII Mode

@KBWFKM2

Alt+Keypad Mode

Example

If **Ctrl+ASCII Mode** is selected and other parameters of USB HID Keyboard adopt factory defaults, barcode data “A<HT>(i.e. Horizontal Tab)F” (0x41/0x09/0x46) is sent as below:

“A” - Keystroke “A”.

<HT> - “Ctrl Make” + Keystroke “I” + “Ctrl Break”

“F” - Keystroke “F”

For some text editors, “Ctrl I” means italic convert. So the output may be “A*F*”.

If **Alt+Keypad Mode** is selected and other parameters of USB HID Keyboard adopt factory defaults, the data above is sent as below:

“A” - Keystroke “A”.

<HT> - “Alt Make” + Keystrokes “009” + “Alt Break”

“F” - Keystroke “F”

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

ASCII Function Key Mapping Table

ASCII Function	ASCII Value (HEX)	Function Key Mapping Disabled	Ctrl+ASCII
NUL	00	Null	Ctrl+@
SOH	01	Keypad Enter	Ctrl+A
STX	02	Caps Lock	Ctrl+B
ETX	03	ALT	Ctrl+C
EOT	04	Null	Ctrl+D
ENQ	05	CTRL	Ctrl+E
ACK	06	Null	Ctrl+F
BEL	07	Enter	Ctrl+G
BS	08	Left Arrow	Ctrl+H
HT	09	Horizontal Tab	Ctrl+I
LF	0A	Down Arrow	Ctrl+J
VT	0B	Vertical Tab	Ctrl+K
FF	0C	Delete	Ctrl+L
CR	0D	Enter	Ctrl+M
SO	0E	Insert	Ctrl+N
SI	0F	Esc	Ctrl+O
DLE	10	F11	Ctrl+P
DC1	11	Home	Ctrl+Q
DC2	12	PrintScreen	Ctrl+R
DC3	13	Backspace	Ctrl+S
DC4	14	tab+shift	Ctrl+T
NAK	15	F12	Ctrl+U
SYN	16	F1	Ctrl+V
ETB	17	F2	Ctrl+W
CAN	18	F3	Ctrl+X
EM	19	F4	Ctrl+Y
SUB	1A	F5	Ctrl+Z
ESC	11	F6	Ctrl+[
FS	1C	F7	Ctrl+\
GS	1D	F8	Ctrl+]
RS	1E	F9	Ctrl+6
US	1F	F10	Ctrl+-

@SETUPE0
**** Exit Setup**

ASCII Function Key Mapping Table (Continued)

The last five characters (0x1B~0x1F) in the table above apply to US keyboard layout only. The following chart provides the equivalents of these five characters for other countries.

Country	Ctrl+ASCII					
United States	Ctrl+[	Ctrl+\	Ctrl+]	Ctrl+6	Ctrl+-	
Belgium	Ctrl+[	Ctrl+<	Ctrl+]	Ctrl+6	Ctrl+-	
Scandinavia	Ctrl+8	Ctrl+<	Ctrl+9	Ctrl+6	Ctrl+-	
France	Ctrl+^	Ctrl+8	Ctrl+$	Ctrl+6	Ctrl+=	
Germany		Ctrl+Ã	Ctrl++	Ctrl+6	Ctrl+-	
Italy		Ctrl+\	Ctrl++	Ctrl+6	Ctrl+-	
Switzerland		Ctrl+<	Ctrl+..	Ctrl+6	Ctrl+-	
United Kingdom	Ctrl+[	Ctrl+ ¢	Ctrl+]	Ctrl+6	Ctrl+-	
Denmark	Ctrl+8	Ctrl+\	Ctrl+9	Ctrl+6	Ctrl+-	
Norway	Ctrl+8	Ctrl+\	Ctrl+9	Ctrl+6	Ctrl+-	
Spain	Ctrl+[	Ctrl+\	Ctrl+]	Ctrl+6	Ctrl+-	

@SETUPE1
Enter Setup

Inter-Keystroke Delay

This parameter specifies the delay between emulated keystrokes.

@KBWDLY0
**** No Delay**

@KBWDLY40
Long Delay (40ms)

@KBWDLY20
Short Delay (20ms)

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Caps Lock

The **Caps Lock On** options can invert upper and lower case characters contained in barcode data. This inversion occurs regardless of the state of Caps Lock key on the host device's keyboard. To disable this feature, scan the appropriate **Caps Lock OFF** barcode below based on your keyboard. Please use Caps Lock configuration barcodes in this section to replace Caps Lock of physical keyboard when using MT581W.

@KBWCAP0

**** Caps Lock OFF, Non-Japanese Keyboard**

@KBWCAP1

Caps Lock ON, Non-Japanese Keyboard

@KBWCAP2

Caps Lock OFF, Japanese Keyboard

@KBWCAP3

Caps Lock ON, Japanese Keyboard

Emulate ALT+Keypad ON/ Convert All to Upper Case/ Convert All to Lower Case prevails over **Caps Lock ON**.

When the **Caps Lock ON** feature is selected, barcode data "AbC" is transmitted as "aBc".

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Convert Case

Scan the appropriate barcode below to convert all bar code data to your desired case.

@KBWCAS0
**** No Case Conversion**

@KBWCAS1
Convert All to Upper Case

@KBWCAS2
Convert All to Lower Case

When the **Convert All to Lower Case** feature is enabled, barcode data “AbC” is transmitted as “abc”.

If **Emulate ALT+Keypad ON** is selected, **Convert All to Lower Case** and **Convert All to Upper Case** do not function.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Emulate Numeric Keypad

Do Not Emulate Numeric Keypad 1: Sending a number (0-9) is emulated as keystroke(s) on main keyboard.

Emulate Numeric Keypad 1: Sending a number (0-9) is emulated as keystroke(s) on numeric keypad. The state of Num Lock on the simulated numeric keypad is determined by its equivalent on the host device. If Num Lock on the host device is turned off, the output of simulated numeric keypad is function key instead of number.

Do Not Emulate Numeric Keypad 2: Sending “+”, “-”, “*” and “/” is emulated as keystroke(s) on main keyboard.

Emulate Numeric Keypad 2: Sending “+”, “-”, “*” and “/” is emulated as keystroke(s) on numeric keypad.

@KBWNUM0

**** Do Not Emulate Numeric Keypad 1**

@KBWNUM1

Emulate Numeric Keypad 1

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

@KBWNCH0

**** Do Not Emulate Numeric Keypad 2**

@KBWNCH1

Emulate Numeric Keypad 2

Emulate ALT+Keypad ON prevails over **Emulate Numeric Keypad**.

Supposing the **Emulate Numeric Keypad 1** feature is enabled:

if Num Lock on the host device is ON, “A4.5” is transmitted as “A4.5”;

if Num Lock on the host device is OFF, “A4.5” is transmitted as “.A”:

1. “A” is sent on main keyboard;
2. “4” is sent as the function key “Cursor Move to Left”;
3. “.” is sent on main keyboard;
4. “5” is not sent as it does not correspond to any function key.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Fast Mode

When **Fast Mode On** is selected, MT581W sends characters to the Host faster. If the Host drops characters, turn the Fast Mode off or change the polling rate to a bigger value.

@KBWFAS0

**** Fast Mode Off**

@KBWFAS1

Fast Mode On

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Polling Rate

This parameter specifies the polling rate for a USB keyboard. If the Host drops characters, change the polling rate to a bigger value. This function is supported by Windows only.

@KBWPOR0
1ms

@KBWPOR1
2ms

@KBWPOR2
3ms

@KBWPOR3
**** 4ms**

@KBWPOR4
5ms

@KBWPOR5
6ms

@KBWPOR6
7ms

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

@KBWPOR7

8ms

@KBWPOR8

9ms

@KBWPOR9

10ms

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

USB CDC

If your engine is connected to the USB port on a host device, the USB CDC feature allows the host device to receive data in the way as a serial port does. A driver is needed when using this feature. Please contact your local distributor for driver.

@INTERF8
USB CDC

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

HID POS (POS HID Barcode Scanner)

Introduction

The HID-POS interface is recommended for new application programs. It can send up to 56 characters in a single USB report and appears more efficient than keyboard emulation.

Features:

- ✧ HID based, no custom driver required.
- ✧ Way more efficient in communication than keyboard emulation and traditional TTL-232 interface.

@INTERF5

USB HID-POS

Access the Engine with Your Program

Use CreateFile to access MT581W as a HID device and then use ReadFile to deliver the scanned data to the application program. Use WriteFile to send data to MT581W.

For detailed information about USB and HID interfaces, go to www.USB.org.

@SETUPE0

**** Exit Setup**

Acquire Scanned Data

After a barcode is decoded, MT581W sends an input report as below:

	Bit							
Byte	7	6	5	4	3	2	1	0
0	Report ID = 0x02							
1	Barcode Length							
2-57	Decoded Data (1-56)							
58-61	Reserved							
62	MT581W Symbology Identifier or N/C: 0x00							
63	-	-	-	-	-	-	-	Decoded data continued

Send Command to the Engine

This output report is used to send commands to MT581W. All programming commands can be used.

	Bit							
Byte	7	6	5	4	3	2	1	0
0	Report ID = 0x04							
1	Length of command							
2-63	Command (1-62)							

@SETUPE1

Enter Setup

IBM SurePOS (Tabletop)

@INTERF6

IBM SurePOS (Tabletop)

IBM SurePOS (Handheld)

@INTERF7

IBM SurePOS (Handheld)

VID/PID

USB uses VID (Vendor ID) and PID (Product ID) to identify and locate a device. The VID is assigned by USB Implementers Forum. MT581W's vendor ID is 1EAB (Hex). Every PID contains a base number and interface type (keyboard, COM port, etc.).

Product	Interface	PID (Hex)	PID (Dec)
MT581W	USB HID Keyboard	2C0	1126
	USB CDC	2C0	1127
	HID POS	2C1	1128
	IBM SurePOS (Tabletop)	2C2	1129
	IBM SurePOS(Handheld)	2C2	1129

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Chapter 3 Symbologies

Introduction

Every symbology (barcode type) has its own unique attributes. This chapter provides programming barcodes for configuring MT581W so that it can identify various symbologies. It is recommended to disable those that are rarely used to increase the efficiency of MT581W.

Global Settings

Enable/Disable All Symbologies

If the **Disable All Symbologies** feature is enabled, MT581W will not be able to read any non-programming barcodes except the programming barcodes.

@ALLENA1

Enable All Symbologies

@ALLENA0

Disable All Symbologies

Enable/Disable 1D Symbologies

@ALL1DC1

Enable 1D Symbologies

@ALL1DC0

Disable 1D Symbologies

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Enable/Disable 2D Symbologies

@ALL2DC1
Enable 2D Symbologies

@ALL2DC0
Disable 2D Symbologies

1D Twin Code

1D twin code is two 1D barcodes of a symbology or of different symbologies paralleled vertically. Both barcodes must have similar specifications and be placed closely together.

✧ **Single 1D Code Only:** Read either 1D code.

@A1DDOU0
**** Single 1D Code Only**

Video Reverse

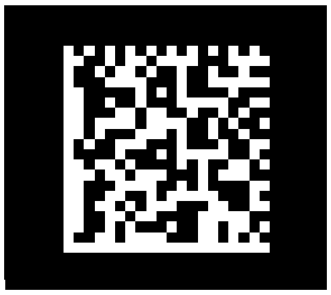
Regular barcode: Dark image on a bright background.
Inverse barcode: Bright image on a dark background.
The examples of regular barcode and inverse barcode are shown as below.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Regular Barcode



Inverse Barcode

Video Reverse allows MT581W to read barcodes that are inverted.

Video Reverse ON: Read both regular barcodes and inverse barcodes.

Video Reverse OFF: Read regular barcodes only.

MT581W shows a slight decrease in scanning speed when Video Reverse is ON.

@ALLINV0

**** Video Reverse OFF**

@ALLINV1

Video Reverse ON

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Code 128

Restore Factory Defaults

@128DEF

Restore the Factory Defaults of Code 128

Enable/Disable Code 128

@128ENA1

**** Enable Code 128**

@128ENA0

Disable Code 128

If MT581W fails to identify Code 128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 128** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Code 128

MT581W can be configured to only decode Code 128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@128MIN

Set the Minimum Length (Default: 1)

@128MAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes Code 128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 128 barcodes with that length are to be decoded.

Set MT581W to decode Code 128 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

EAN-8

Restore Factory Defaults

@EA8DEF

Restore the Factory Defaults of EAN-8

Enable/Disable EAN-8

@EA8ENA1

**** Enable EAN-8**

@EA8ENA0

Disable EAN-8

If MT581W fails to identify EAN-8 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable EAN-8** barcode.

Transmit Check Character

EAN-8 is 8 digits in length with the last one as its check character used to verify the integrity of the data.

@EA8CHK2

**** Transmit EAN-8 Check Character**

@EA8CHK1

Do Not Transmit EAN-8 Check Character

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

2-Digit Add-On Code

An EAN-8 barcode can be augmented with a two-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is an EAN-8 barcode while the part circled by red dotted line is a two-digit add-on code.

@EA8AD20

**** Disable 2-Digit Add-On Code**

@EA8AD21

Enable 2-Digit Add-On Code

Disable 2-Digit Add-On Code: MT581W decodes EAN-8 and ignores the add-on code when presented with an EAN-8 plus 2-digit add-on barcode. It can also decode EAN-8 barcodes without 2-digit add-on codes.

Enable 2-Digit Add-On Code: MT581W decodes a mix of EAN-8 barcodes with and without 2-digit add-on codes.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

5-Digit Add-On Code

An EAN-8 barcode can be augmented with a five-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is an EAN-8 barcode while the part circled by red dotted line is a five-digit add-on code.

@EA8AD50

**** Disable 5-Digit Add-On Code**

@EA8AD51

Enable 5-Digit Add-On Code

Disable 5-Digit Add-On Code: MT581W decodes EAN-8 and ignores the add-on code when presented with an EAN-8 plus 5-digit add-on barcode. It can also decode EAN-8 barcodes without 5-digit add-on codes.

Enable 5-Digit Add-On Code: MT581W decodes a mix of EAN-8 barcodes with and without 5-digit add-on codes.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Add-On Code Required

When **EAN-8 Add-On Code Required** is selected, MT581W will only read EAN-8 barcodes that contain add-on codes.

@EA8REQ0

**** EAN-8 Add-On Code Not Required**

@EA8REQ1

EAN-8 Add-On Code Required

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

EAN-13

Restore Factory Defaults

@E13DEF

Restore the Factory Defaults of EAN-13

Enable/Disable EAN-13

@E13ENA1

**** Enable EAN-13**

@E13ENA0

Disable EAN-13

If MT581W fails to identify EAN-13 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable EAN-13** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Transmit Check Character

@E13CHK2

**** Transmit EAN-13 Check Character**

@E13CHK1

Do Not Transmit EAN-13 Check Character

2-Digit Add-On Code

An EAN-13 barcode can be augmented with a two-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is an EAN-13 barcode while the part circled by red dotted line is a two-digit add-on code.

@E13AD20

**** Disable 2-Digit Add-On Code**

@E13AD21

Enable 2-Digit Add-On Code

Disable 2-Digit Add-On Code: MT581W decodes EAN-13 and ignores the add-on code when presented with an EAN-13 plus 2-digit add-on barcode. It can also decode EAN-13 barcodes without 2-digit add-on codes.

Enable 2-Digit Add-On Code: MT581W decodes a mix of EAN-13 barcodes with and without 2-digit add-on codes.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

5-Digit Add-On Code

An EAN-13 barcode can be augmented with a five-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is an EAN-13 barcode while the part circled by red dotted line is a five-digit add-on code.

@E13AD50

**** Disable 5-Digit Add-On Code**

@E13AD51

Enable 5-Digit Add-On Code

Disable 5-Digit Add-On Code: MT581W decodes EAN-13 and ignores the add-on code when presented with an EAN-13 plus 5-digit add-on barcode. It can also decode EAN-13 barcodes without 5-digit add-on codes.

Enable 5-Digit Add-On Code: MT581W decodes a mix of EAN-13 barcodes with and without 5-digit add-on codes.

Add-On Code Required

When **EAN-13 Add-On Code Required** is selected, MT581W will only read EAN-13 barcodes that contain add-on codes.

@E13REQ0

**** EAN-13 Add-On Code Not Required**

@E13REQ1

EAN-13 Add-On Code Required

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

EAN-13 Beginning with 290 Add-On Code Required

This setting programs MT581W to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with “290”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with “290” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.

@E132900

** **Do Not Require Add-On Code**

@E132901

Require Add-On Code

EAN-13 Beginning with 378/379 Add-On Code Required

This setting programs MT581W to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a “378” or “379”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with a “378” or “379” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.

@E133780

** **Do Not Require Add-On Code**

@E133781

Require Add-On Code

@SETUPE0

** **Exit Setup**

@SETUPE1

Enter Setup

EAN-13 Beginning with 414/419 Add-On Code Required

This setting programs MT581W to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a “414” or “419”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with a “414” or “419” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.

@E134140

**** Do Not Require Add-On Code**

@E134141

Require Add-On Code

EAN-13 Beginning with 434/439 Add-On Code Required

This setting programs MT581W to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a “434” or “439”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with a “434” or “439” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.

@E134340

**** Do Not Require Add-On Code**

@E134341

Require Add-On Code

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

EAN-13 Beginning with 977 Add-On Code Required

This setting programs MT581W to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with “977”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with “977” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.

@E139770

** **Do Not Require Add-On Code**

@E139771

Require Add-On Code

EAN-13 Beginning with 978 Add-On Code Required

This setting programs MT581W to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with “978”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with “978” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.

@E139780

** **Do Not Require Add-On Code**

@E139781

Require Add-On Code

@SETUPE0

** **Exit Setup**

@SETUPE1

Enter Setup

EAN-13 Beginning with 979 Add-On Code Required

This setting programs MT581W to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with “979”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with “979” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.

@E139790

**** Do Not Require Add-On Code**

@E139791

Require Add-On Code

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

UPC-E

Restore Factory Defaults

@UPEDEF

Restore the Factory Defaults of UPC-E

Enable/Disable UPC-E

@UPEENA1

**** Enable UPC-E**

@UPEENA0

Disable UPC-E

If MT581W fails to identify UPC-E barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UPC-E** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Transmit Check Character

UPC-E is 8 digits in length with the last one as its check character used to verify the integrity of the data.

@UPECHK2

**** Transmit UPC-E Check Character**

@UPECHK1

Do Not Transmit UPC-E Check Character

2-Digit Add-On Code

A UPC-E barcode can be augmented with a two-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is a UPC-E barcode while the part circled by red dotted line is a two-digit add-on code.

@UPEAD20

**** Disable 2-Digit Add-On Code**

@UPEAD21

Enable 2-Digit Add-On Code

Disable 2-Digit Add-On Code: MT581W decodes UPC-E and ignores the add-on code when presented with a UPC-E plus 2-digit add-on barcode. It can also decode UPC-E barcodes without 2-digit add-on codes.

Enable 2-Digit Add-On Code: MT581W decodes a mix of UPC-E barcodes with and without 2-digit add-on codes.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

5-Digit Add-On Code

A UPC-E barcode can be augmented with a five-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is a UPC-E barcode while the part circled by red dotted line is a five-digit add-on code.

@UPEAD50

**** Disable 5-Digit Add-On Code**

@UPEAD51

Enable 5-Digit Add-On Code

Disable 5-Digit Add-On Code: MT581W decodes UPC-E and ignores the add-on code when presented with a UPC-E plus 5-digit add-on barcode. It can also decode UPC-E barcodes without 5-digit add-on codes.

Enable 5-Digit Add-On Code: MT581W decodes a mix of UPC-E barcodes with and without 5-digit add-on codes.

Add-On Code Required

When **UPC-E Add-On Code Required** is selected, MT581W will only read **UPC-E** barcodes that contain add-on codes.

@UPEREQ0

**** UPC-E Add-On Code Not Required**

@UPEREQ1

UPC-E Add-On Code Required

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Transmit Preamble Character

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-E barcode. Select one of the following options for transmitting UPC-E preamble to the host device: transmit system character only, transmit system character and country code ("0" for USA), or transmit no preamble.

@UPEPRE1
**** System Character**

@UPEPRE0
No Preamble

@UPEPRE2
System Character & Country Code

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

UPC-A

Restore Factory Defaults

@UPADEF

Restore the Factory Defaults of UPC-A

Enable/Disable UPC-A

@UPAENA1

**** Enable UPC-A**

@UPAENA0

Disable UPC-A

If MT581W fails to identify UPC-A barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UPC-A** barcode.

Transmit Check Character

UPC-A is 13 digits in length with the last one as its check character used to verify the integrity of the data.

@UPACHK2

**** Transmit UPC-A Check Character**

@UPACHK1

Do Not Transmit UPC-A Check Character

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

2-Digit Add-On Code

A UPC-A barcode can be augmented with a two-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is a UPC-A barcode while the part circled by red dotted line is a two-digit add-on code.

@UPAAD20

**** Disable 2-Digit Add-On Code**

@UPAAD21

Enable 2-Digit Add-On Code

Disable 2-Digit Add-On Code: MT581W decodes UPC-A and ignores the add-on code when presented with a UPC-A plus 2-digit add-on barcode. It can also decode UPC-A barcodes without 2-digit add-on codes.

Enable 2-Digit Add-On Code: MT581W decodes a mix of UPC-A barcodes with and without 2-digit add-on codes.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

5-Digit Add-On Code

A UPC-A barcode can be augmented with a five-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is a UPC-A barcode while the part circled by red dotted line is a five-digit add-on code.

@UPAAD50

**** Disable 5-Digit Add-On Code**

@UPAAD51

Enable 5-Digit Add-On Code

Disable 5-Digit Add-On Code: MT581W decodes UPC-A and ignores the add-on code when presented with a UPC-A plus 5-digit add-on barcode. It can also decode UPC-A barcodes without 5-digit add-on codes.

Enable 5-Digit Add-On Code: MT581W decodes a mix of UPC-A barcodes with and without 5-digit add-on codes.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Add-On Code Required

When **UPC-A Add-On Code Required** is selected, MT581W will only read **UPC-A** barcodes that contain add-on codes.

@UPAREQ0

**** UPC-A Add-On Code Not Required**

@UPAREQ1

UPC-A Add-On Code Required

Transmit Preamble Character

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-A barcode. Select one of the following options for transmitting UPC-A preamble to the host device: transmit system character only, transmit system character and country code (“0” for USA), or transmit no preamble.

@UPAPRE0

**** No Preamble**

@UPAPRE1

System Character

@UPAPRE2

System Character & Country Code

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Interleaved 2 of 5

Restore Factory Defaults

@I25DEF

Restore the Factory Defaults of Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5

@I25ENA1

**** Enable Interleaved 2 of 5**

@I25ENA0

Disable Interleaved 2 of 5

If MT581W fails to identify Interleaved 2 of 5 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Interleaved 2 of 5** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Interleaved 2 of 5

MT581W can be configured to only decode Interleaved 2 of 5 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@I25MIN

Set the Minimum Length (Default: 6)

@I25MAX

Set the Maximum Length (Default: 80)

If minimum length is set to be greater than maximum length, MT581W only decodes Interleaved 2 of 5 maximum length, barcodes with either the minimum or maximum length. If minimum length is same as only Interleaved 2 of 5 barcodes with that length are to be decoded.

Set MT581W to decode Interleaved 2 of 5 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Check Character Verification

A check character is optional for Interleaved 2 of 5 and can be added as the last character. It is a calculated value used to verify the integrity of the data.

Disable: MT581W transmits Interleaved 2 of 5 barcodes as is.

Do Not Transmit Check Character After Verification: MT581W checks the integrity of all Interleaved 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MT581W checks the integrity of all Interleaved 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

Since Interleaved 2 of 5 must always have an even number of digits, a zero may need to be added as the first digit when the check character is added. The check character is automatically generated when making Interleaved 2 of 5 barcodes.

@I25CHK0

**** Disable**

@I25CHK1

Do Not Transmit Check Character After Verification

@I25CHK2

Transmit Check Character After Verification

If the **Do Not Transmit Check Character After Verification** option is enabled, Interleaved 2 of 5 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Interleaved 2 of 5 barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Febraban

Disable/Enable Febraban

@I25FBB0

**** Disable Febraban**

@I25FBB1

Enable Febraban, Do Not Expand

@I25FBB2

Enable Febraban, Expand

Transmit Delay per Character

Transmit Delay per Character applies to both Expanded and Unexpanded Febraban. This feature is available only when USB HID Keyboard is enabled.

@FEBSEN0

**** Disable Transmit Delay per Character**

@FEBSEN1

Enable Transmit Delay per Character

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

You may select an appropriate delay value from the options below as per your actual needs.

@FEBSDT0

0ms

@FEBSDT5

5ms

@FEBSDT10

10ms

@FEBSDT15

15ms

@FEBSDT20

20ms

@FEBSDT25

25ms

@FEBSDT30

30ms

@FEBSDT35

35ms

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

@FEBSDT40

40ms

@FEBSDT45

45ms

@FEBSDT50

50ms

@FEBSDT55

55ms

@FEBSDT60

60ms

@FEBSDT65

65ms

@FEBSDT70

**** 70ms**

@FEBSDT75

75ms

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Transmit Delay per 12 Characters

Transmit Delay per 12 Characters applies to Expanded Febraban only. This feature is available only when USB HID Keyboard is enabled.

@FEBMEN0

**** Disable Transmit Delay per 12 Characters**

@FEBMEN1

Enable Transmit Delay per 12 Characters

You may select an appropriate delay value from the options below as per your actual needs.

@FEBMDT0

0ms

@FEBMDT1

300ms

@FEBMDT2

400ms

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

@FEBMDT3

**** 500ms**

@FEBMDT4

600ms

@FEBMDT5

700ms

@FEBMDT6

800ms

@FEBMDT7

900ms

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

ITF-14

ITF-14 is a special kind of Interleaved 2 of 5 with a length of 14 characters and the last character as the check character.

ITF-14 priority principle: Forthe Interleaved 2 of 5 barcodes with a length of 14 characters and the last character as the check character, the ITF-14 configurations shall take precedence over the Interleaved 2 of 5 settings.

Restore Factory Defaults

@I14DEF

Restore the Factory Defaults of ITF-14

Enable/Disable ITF-14

@I14ENA0

**** Disable ITF-14**

@I14ENA1

Enable ITF-14 But Do Not Transmit Check Character

@I14ENA2

Enable ITF-14 and Transmit Check Character

An example of the ITF-14 priority principle: when ITF-14 is enabled and Interleaved 2 of 5 is disabled, MT581W only decodes Interleaved 2 of 5 barcodes with a length of 14 characters and the last character as the check character.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

ITF-6

ITF-6 is a special kind of Interleaved 2 of 5 with a length of 6 characters and the last character as the check character.

ITF-6 priority principle: For the Interleaved 2 of 5 barcodes with a length of 6 characters and the last character as the check character, the ITF-6 configurations shall take precedence over the Interleaved 2 of 5 settings.

Restore Factory Defaults

@IT6DEF

Restore the Factory Defaults of ITF-6

Enable/Disable ITF-6

@IT6ENA0

**** Disable ITF-6**

@IT6ENA1

Enable ITF-6 But Do Not Transmit Check Character

@IT6ENA2

Enable ITF-6 and Transmit Check Character

An example of the ITF-6 priority principle: when ITF-6 is enabled and Interleaved 2 of 5 is disabled, MT581W only decodes Interleaved 2 of 5 barcodes with a length of 6 characters and the last character as the check character.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Matrix 2 of 5

Restore Factory Defaults

@M25DEF

Restore the Factory Defaults of Matrix 2 of 5

Enable/Disable Matrix 2 of 5

@M25ENA1

**** Enable Matrix 2 of 5**

@M25ENA0

Disable Matrix 2 of 5

If MT581W fails to identify Matrix 2 of 5 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Matrix 2 of 5** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Matrix 2 of 5

MT581W can be configured to only decode Matrix 2 of 5 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@M25MIN

Set the Minimum Length (Default: 4)

@M25MAX

Set the Maximum Length (Default: 80)

If minimum length is set to be greater than maximum length, MT581W only decodes Matrix 2 of 5 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Matrix 2 of 5 barcodes with that length are to be decoded.

Set MT581W to decode Matrix 2 of 5 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Check Character Verification

A check character is optional for Matrix 2 of 5 and can be added as the last character. It is a calculated value used to verify the integrity of the data.

Disable: MT581W transmitsMatrix 2 of 5 barcodes as is.

Do Not Transmit Check Character After Verification: MT581W checks the integrity of all Matrix 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MT581W checks the integrity of all Matrix 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

Since Matrix 2 of 5 must always have an even number of digits, a zero may need to be added as the first digit when the check character is added. The check character is automatically generated when making Matrix 2 of 5 barcodes.

@M25CHK0

**** Disable**

@M25CHK1

Do Not Transmit Check Character After Verification

@M25CHK2

Transmit Check Character After Verification

If the **Do Not Transmit Check Character After Verification** option is enabled, Matrix 2 of 5 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Matrix 2 of 5 barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Code 39

Restore Factory Defaults

@C39DEF

Restore the Factory Defaults of Code 39

Enable/Disable Code 39

@C39ENA1

**** Enable Code 39**

@C39ENA0

Disable Code 39

If MT581W fails to identify Code 39 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 39** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Code 39

MT581W can be configured to only decode Code 39 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@C39MIN

Set the Minimum Length (Default: 1)

@C39MAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes Code 39 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 39 barcodes with that length are to be decoded.

Set MT581W to decode Code 39 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Check Character Verification

A check character is optional for Code 39 and can be added as the last character. It is a calculated value used to verify the integrity of the data.

Disable: MT581W transmits Code 39 barcodes as is.

Do Not Transmit Check Character After Verification: MT581W checks the integrity of all Code 39 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MT581W checks the integrity of all Code 39 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

@C39CHK0

**** Disable**

@C39CHK1

Do Not Transmit Check Character After Verification

@C39CHK2

Transmit Check Character After Verification

If the **Do Not Transmit Check Character After Verification** option is enabled, Code 39 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Code 39 barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Transmit Start/Stop Character

Code 39 uses an asterisk (*) for both the start and the stop characters. You can choose whether or not to transmit the start/stop characters by scanning the appropriate barcode below.

@C39TSC0

**** Do Not Transmit Start/Stop Character**

@C39TSC1

Transmit Start/Stop Character

Enable/Disable Code 39 Full ASCII

MT581W can be configured to identify all ASCII characters by scanning the appropriate barcode below.

@C39ASC0

**** Disable Code 39 Full ASCII**

@C39ASC1

Enable Code 39 Full ASCII

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Enable/Disable Code 32 (Italian Pharma Code)

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan the appropriate bar code below to enable or disable Code 32. Code 39 must be enabled and Code 39 check character verification must be disabled for this parameter to function.

@C39E320

**** Disable Code 32**

@C39E321

Enable Code 32

Code 32 Prefix

Scan the appropriate barcode below to enable or disable adding the prefix character “A” to all Code 32 barcodes. Code 32 must be enabled for this parameter to function.

@C39S320

**** Disable Code 32 Prefix**

@C39S321

Enable Code 32 Prefix

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Transmit Code 32 Start/Stop Character

Code 32 must be enabled for this parameter to function.

@C39T320

**** Do Not Transmit Code 32 Start/Stop Character**

@C39T321

Transmit Code 32 Start/Stop Character

Transmit Code 32 Check Character

Code 32 must be enabled for this parameter to function.

@C39C320

**** Do Not Transmit Code 32 Check Character**

@C39C321

Transmit Code 32 Check Character

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Codabar

Restore Factory Defaults

@CBADEF

Restore the Factory Defaults of Codabar

Enable/Disable Codabar

@CBAENA1

**** Enable Codabar**

@CBAENA0

Disable Codabar

If MT581W fails to identify Codabar barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Codabar** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Codabar

MT581W can be configured to only decode Codabar barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@CBAMIN

Set the Minimum Length (Default: 2)

@CBAMAX

Set the Maximum Length (Default: 60)

If minimum length is set to be greater than maximum length, MT581W only decodes Codabar barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Codabar barcodes with that length are to be decoded.

Set MT581W to decode Codabar barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Check Character Verification

A check character is optional for Codabar and can be added as the last character. It is a calculated value used to verify the integrity of the data.

Disable: MT581W transmits Codabar barcodes as is.

Do Not Transmit Check Character After Verification: MT581W checks the integrity of all Codabar barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MT581W checks the integrity of all Codabar barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

@CBACHK0
**** Disable**

@CBACHK1
Do Not Transmit Check Character After Verification

@CBACHK2
Transmit Check Character After Verification

If the **Do Not Transmit Check Character After Verification** option is enabled, Codabar barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Codabar barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Start/Stop Character

You can set the start/stop characters and choose whether or not to transmit the start/stop characters by scanning the appropriate barcode below.

@CBATSC0

**** Do Not Transmit Start/Stop Character**

@CBATSC1

Transmit Start/Stop Character

@CBASCF0

**** ABCD/ABCD as the Start/Stop Character**

@CBASCF1

ABCD/TN*E as the Start/Stop Character

@CBASCF2

abcd/abcd as the Start/Stop Character

@CBASCF3

abcd/tn*e as the Start/Stop Character

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Code 93

Restore Factory Defaults

@C93DEF

Restore the Factory Defaults of Code 93

Enable/Disable Code 93

@C93ENA1

Enable Code 93

@C93ENA0

**** Disable Code 93**

If MT581W fails to identify Code 93 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 93** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Code 93

MT581W can be configured to only decode Code 93 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@C93MIN

Set the Minimum Length (Default: 1)

@C93MAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes Code 93 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 93 barcodes with that length are to be decoded.

Set MT581W to decode Code 93 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Check Character Verification

Check characters are optional for Code 93 and can be added as the last two characters, which are calculated values used to verify the integrity of the data.

Disable: MT581W transmits Code 93 barcodes as is.

Do Not Transmit Check Character After Verification: MT581W checks the integrity of all Code 93 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the checks will be transmitted except the last two digits, whereas those failing them will not be transmitted.

Transmit Check Character After Verification: MT581W checks the integrity of all Code 93 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the checks will be transmitted, whereas those failing them will not be transmitted.

@C93CHK0

Disable

@C93CHK1

**** Do Not Transmit Check Character After Verification**

@C93CHK2

Transmit Check Character After Verification

If the **Do Not Transmit Check Character After Verification** option is enabled, Code 93 barcodes with a length that is less than the configured minimum length after having the two check characters excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Code 93 barcodes with a total length of 4 characters including the two check characters cannot be read.)

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

GS1-128 (UCC/EAN-128)

Restore Factory Defaults

@GS1DEF

Restore the Factory Defaults of GS1-128

Enable/Disable GS1-128

@GS1ENA1

**** Enable GS1-128**

@GS1ENA0

Disable GS1-128

If MT581W fails to identify GS1-128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable GS1-128** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for GS1-128

MT581W can be configured to only decode GS1-128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@GS1MIN

Set the Minimum Length (Default: 1)

@GS1MAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes GS1-128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only GS1-128 barcodes with that length are to be decoded.

Set MT581W to decode GS1-128 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

GS1 Databar (RSS)

Restore Factory Defaults

@RSSDEF

Restore the Factory Defaults of GS1 Databar

Enable/Disable GS1 Databar

@RSSENA1

**** Enable GS1 Databar**

@RSSENA0

Disable GS1 Databar

If MT581W fails to identify GS1 Databar barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable GS1 Databar** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Transmit Application Identifier “01”

@RSSTAI1

**** Transmit Application Identifier “01”**

@RSSTAI0

Do Not Transmit Application Identifier “01”

Code 11

Restore Factory Defaults

@C11DEF

Restore the Factory Defaults of Code 11

Enable/Disable Code 11

@C11ENA1

Enable Code 11

@C11ENA0

**** Disable Code 11**

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

If MT581W fails to identify Code 11 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 11** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Code 11

MT581W can be configured to only decode Code 11 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@C11MIN

Set the Minimum Length (Default: 4)

@C11MAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes Code 11 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 11 barcodes with that length are to be decoded.

Set MT581W to decode Code 11 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Check Character Verification

Check characters are optional for Code 11 and can be added as the last one or two characters, which are calculated values used to verify the integrity of the data.

If the **Disable** option is enabled, MT581W transmits Code 11 barcodes as is.

@C11CHK0

Disable

@C11CHK1

**** One Check Character, MOD11**

@C11CHK2

Two Check Characters, MOD11/MOD11

@C11CHK3

Two Check Characters, MOD11/MOD9

@C11CHK4

One Check Character, MOD11 (Len<=10)

Two Check Characters, MOD11/MOD11(Len>10)

@C11CHK5

One Check Character, MOD11 (Len<=10)

Two Check Characters, MOD11/MOD9 (Len>10)

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Transmit Check Character

@C11TCK0
Do Not Transmit Code 11 Check Character

@C11TCK1
**** Transmit Code 11 Check Character**

If you select a check character algorithm and the **Do Not Transmit Check Character** option, Code 11 barcodes with a length that is less than the configured minimum length after having the check character(s) excluded will not be decoded. (For example, when the **One Check Character, MOD11** and **Do Not Transmit Check Character** options are enabled and the minimum length is set to 4, Code 11 barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

ISBN

Restore Factory Defaults

@ISBDEF

Restore the Factory Defaults of ISBN

Enable/Disable ISBN

@ISBENA1

Enable ISBN

@ISBENA0

**** Disable ISBN**

If MT581W fails to identify ISBN barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable ISBN** barcode.

Set ISBN Format

@ISBT101

**** ISBN-10**

@ISBT100

ISBN-13

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

ISSN

Restore Factory Defaults

@ISSDEF

Restore the Factory Defaults of ISSN

Enable/Disable ISSN

@ISSENA1

Enable ISSN

@ISSENA0

**** Disable ISSN**

If MT581W fails to identify ISSN barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable ISSN** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Industrial 25

Restore Factory Defaults

@L25DEF

Restore the Factory Defaults of Industrial 25

Enable/Disable Industrial 25

@L25ENA1

Enable Industrial 25

@L25ENA0

**** Disable Industrial 25**

If MT581W fails to identify Industrial 25 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Industrial 25** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Industrial 25

MT581W can be configured to only decode Industrial 25 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@L25MIN

Set the Minimum Length (Default: 6)

@L25MAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes Industrial 25 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Industrial 25 barcodes with that length are to be decoded.

Set MT581W to decode Industrial 25 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Check Character Verification

A check character is optional for Industrial 25 and can be added as the last character. It is a calculated value used to verify the integrity of the data.

Disable: MT581W transmits Industrial 25 barcodes as is.

Do Not Transmit Check Character After Verification: MT581W checks the integrity of all Industrial 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MT581W checks the integrity of all Industrial 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

@L25CHK0

**** Disable**

@L25CHK1

Do Not Transmit Check Character After Verification

@L25CHK2

Transmit Check Character After Verification

If the **Do Not Transmit Check Character After Verification** option is enabled, Industrial 25 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Industrial 25 barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Standard 25

Restore Factory Defaults

@S25DEF

Restore the Factory Defaults of Standard 25

Enable/Disable Standard 25

@S25ENA1

Enable Standard 25

@S25ENA0

**** Disable Standard 25**

If MT581W fails to identify Standard 25 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Standard 25** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Standard 25

MT581W can be configured to only decode Standard 25 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@S25MIN

Set the Minimum Length (Default: 6)

@S25MAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes Standard 25 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Standard 25 barcodes with that length are to be decoded.

Set MT581W to decode Standard 25 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Check Character Verification

A check character is optional for Standard 25 and can be added as the last character. It is a calculated value used to verify the integrity of the data.

Disable: MT581W transmits Standard 25 barcodes as is.

Do Not Transmit Check Character After Verification: MT581W checks the integrity of all Standard 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MT581W checks the integrity of all Standard 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

@S25CHK0
**** Disable**

@S25CHK1
Do Not Transmit Check Character After Verification

@S25CHK2
Transmit Check Character After Verification

If the **Do Not Transmit Check Character After Verification** option is enabled, Standard 25 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Standard 25 barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Plessey

Restore Factory Defaults

@PLYDEF

Restore the Factory Defaults of Plessey

Enable/Disable Plessey

@PLYENA1

Enable Plessey

@PLYENA0

**** Disable Plessey**

If MT581W fails to identify Plessey barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Plessey** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Plessey

MT581W can be configured to only decode Plessey barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@PLYMIN

Set the Minimum Length (Default: 4)

@PLYMAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes Plessey barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Plessey barcodes with that length are to be decoded.

Set MT581W to decode Plessey barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Check Character Verification

Check characters are optional for Plessey and can be added as the last two characters, which are calculated values used to verify the integrity of the data.

Disable: MT581W transmits Plessey barcodes as is.

Do Not Transmit Check Character After Verification: MT581W checks the integrity of all Plessey barcodes to verify that the data complies with the check character algorithm. Barcodes passing the checks will be transmitted except the last two digits, whereas those failing them will not be transmitted.

Transmit Check Character After Verification: MT581W checks the integrity of all Plessey barcodes to verify that the data complies with the check character algorithm. Barcodes passing the checks will be transmitted, whereas those failing them will not be transmitted.

@PLYCHK0

**** Disable**

@PLYCHK1

Do Not Transmit Check Character After Verification

@PLYCHK2

Transmit Check Character After Verification

If the **Do Not Transmit Check Character After Verification** option is enabled, Plessey barcodes with a length that is less than the configured minimum length after having the check characters excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Plessey barcodes with a total length of 4 characters including the check characters cannot be read.)

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

MSI-Plessey

Restore Factory Defaults

@MSIDEF

Restore the Factory Defaults of MSI-Plessey

Enable/Disable MSI-Plessey

@MSIENA1

Enable MSI-Plessey

@MSIENA0

**** Disable MSI-Plessey**

If MT581W fails to identify MSI-Plessey barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable MSI-Plessey** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for MSI-Plessey

MT581W can be configured to only decode MSI-Plessey barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@MSIMIN

Set the Minimum Length (Default: 4)

@MSIMAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes MSI-Plessey barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only MSI-Plessey barcodes with that length are to be decoded.

Set MT581W to decode MSI-Plessey barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Check Character Verification

Check characters are optional for MSI-Plessey and can be added as the last one or two characters, which are calculated values used to verify the integrity of the data.

If the **Disable** option is enabled, MT581W transmits MSI-Plessey barcodes as is.

@MSICHK0
Disable

@MSICHK1
**** One Check Character, MOD10**

@MSICHK2
Two Check Characters, MOD10/MOD10

@MSICHK3
Two Check Characters, MOD10/MOD11

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Transmit Check Character

@MSITCK1

Transmit MSI-Plessey Check Character

@MSITCK0

**** Do Not Transmit MSI-Plessey Check Character**

If you select a check character algorithm and the **Do Not Transmit Check Character** option, MSI-Plessey barcodes with a length that is less than the configured minimum length after having the check character(s) excluded will not be decoded. (For example, when the **One Check Character, MOD10** and **Do Not Transmit Check Character** options are enabled and the minimum length is set to 4, MSI-Plessey barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

AIM 128

Restore Factory Defaults

@AIMDEF

Restore the Factory Defaults of AIM 128

Enable/Disable AIM 128

@AIMENA1

Enable AIM 128

@AIMENA0

**** Disable AIM 128**

If MT581W fails to identify AIM 128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable AIM 128** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for AIM 128

MT581W can be configured to only decode AIM 128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@AIMMIN

Set the Minimum Length (Default: 1)

@AIMMAX

Set the Maximum Length (Default: 48)

If minimum length is set to be greater than maximum length, MT581W only decodes AIM 128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only AIM 128 barcodes with that length are to be decoded.

Set MT581W to decode AIM 128 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

PDF417

Restore Factory Defaults

@PDFDEF

Restore the Factory Defaults of PDF417

Enable/Disable PDF417

@PDFENA1

**** Enable PDF417**

@PDFENA0

Disable PDF417

If MT581W fails to identify PDF417 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable PDF417** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for PDF417

MT581W can be configured to only decode PDF417 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@PDFMIN

Set the Minimum Length (Default: 1)

@PDFMAX

Set the Maximum Length (Default: 2710)

Minimum length is not allowed to be greater than maximum length. If you only want to read PDF417 barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Set MT581W to decode PDF417 barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

PDF417 Twin Code

PDF417 twin code is 2 PDF417 barcodes paralleled vertically or horizontally. They must both be either regular or inverse barcodes. They must have similar specifications and be placed closely together.

There are 3 options for reading PDF417 twin codes:

- ✧ **Single PDF417 Only:** Read either PDF417 code.
- ✧ **Twin PDF417 Only:** Read both PDF417 codes.
- ✧ **Both Single & Twin:** Read both PDF417 codes. If successful, transmit as twin PDF417 only. Otherwise, try single PDF417 only.

@PDFDOU0

**** Single PDF417 Only**

@PDFDOU1

Twin PDF417 Only

@PDFDOU2

Both Single & Twin

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Character Encoding

@PDFENC0

**** Default Character Encoding**

@PDFENC1

UTF-8

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

PDF417 ECI Output

@PDFECI0
Disable PDF417 ECI Output

@PDFECI1
**** Enable PDF417 ECI Output**

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

QR Code

Restore Factory Defaults

@QRCDEF

Restore the Factory Defaults of QR Code

Enable/Disable QR Code

@QRCENA1

**** Enable QR Code**

@QRCENA0

Disable QR Code

If MT581W fails to identify QR Code barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable QR Code** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for QR Code

MT581W can be configured to only decode QR Code barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@QRCMIN

Set the Minimum Length (Default: 1)

@QRCMAX

Set the Maximum Length (Default: 7089)

Minimum length is not allowed to be greater than maximum length. If you only want to read QR Code barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Set MT581W to decode QR Code barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

QR Twin Code

QR twin code is 2 QR barcodes paralleled vertically or horizontally. They must both be either regular or inverse barcodes. They must have similar specifications and be placed closely together.

There are 3 options for reading QR twin codes:

- **Single QR Only:** Read either QR code.
- **Twin QR Only:** Read both QR codes. Transmission sequence: left (upper) QR code followed by right (lower) QR code.
- **Both Single & Twin:** Read both QR codes. If successful, transmit as twin QR only. Otherwise, try single QR only.

@QRCDOU0

**** Single QR Only**

@QRCDOU1

Twin QR Only

@QRCDOU2

Both Single & Twin

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Character Encoding

@QRCENC0

**** Default Character Encoding**

@QRCENC1

UTF-8

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

QR ECI Output

@QRCECI0

Disable QR ECI Output

@QRCECI1

**** Enable QR ECI Output**

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Micro QR Code

Restore Factory Defaults

@MQRDEF

Restore the Factory Defaults of Micro QR

Enable/Disable Micro QR

@MQRENA1

**** Enable Micro QR**

@MQRENA0

Disable Micro QR

If MT581W fails to identify Micro QR barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Micro QR** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Micro QR

MT581W can be configured to only decode Micro QR barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@MQRMIN

Set the Minimum Length (Default: 1)

@MQRMAX

Set the Maximum Length (Default: 35)

Minimum length is not allowed to be greater than maximum length. If you only want to read Micro QR barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Set MT581W to decode Micro QR Code barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Aztec

Restore Factory Defaults

@AZTDEF

Restore the Factory Defaults of Aztec Code

Enable/Disable Aztec Code

@AZTENA1

Enable Aztec Code

@AZTENA0

**** Disable Aztec Code**

If MT581W fails to identify Aztec Code barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Aztec Code** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Aztec Code

MT581W can be configured to only decode Aztec barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@AZTMIN

Set the Minimum Length (Default: 1)

@AZTMAX

Set the Maximum Length (Default: 6144)

Minimum length is not allowed to be greater than maximum length. If you only want to read Aztec barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Set MT581W to decode Aztec barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Character Encoding

@AZTENC0
**** Default Character Encoding**

@AZTENC1
UTF-8

Aztec ECI Output

@AZTECI0
Disable Aztec ECI Output

@AZTECI1
**** Enable Aztec ECI Output**

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Data Matrix

Restore Factory Defaults

@DMCDEF

Restore the Factory Defaults of Data Matrix

Enable/Disable Data Matrix

@DMCENA1

**** Enable Data Matrix**

@DMCENA0

Disable Data Matrix

If MT581W fails to identify Data Matrix barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Data Matrix** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Set Length Range for Data Matrix

MT581W can be configured to only decode Data Matrix barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

@DMCMIN

Set the Minimum Length (Default: 1)

@DMCMAX

Set the Maximum Length (Default: 3116)

Minimum length is not allowed to be greater than maximum length. If you only want to read Data Matrix barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Set MT581W to decode Data Matrix barcodes containing between 8 and 12 characters:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2” from the “Digit Barcodes” section in Appendix.
7. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
8. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Data Matrix Twin Code

Data Matrix twin code is 2 Data Matrix barcodes paralleled vertically or horizontally. They must both be either regular or inverse barcodes. They must have similar specifications and be placed closely together.

There are 3 options for reading Data Matrix twin codes:

- **Single Data Matrix Only:** Read either Data Matrix code.
- **Twin Data Matrix Only:** Read both Data Matrix codes. Transmission sequence: left (upper) Data Matrix code followed by right (lower) Data Matrix code.
- **Both Single & Twin:** Read both Data Matrix codes. If successful, transmit as twin Data Matrix only. Otherwise, try single Data Matrix only.

@DMCDOU0

**** Single Data Matrix Only**

@DMCDOU1

Twin Data Matrix Only

@DMCDOU2

Both Single & Twin

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Rectangular Barcode

Data Matrix has two formats:

Square barcodes having the same amount of modules in length and width: 10*10, 12*12.... 144*144.

Rectangular barcodes having different amounts of models in length and width: 6*16, 6*14...14*22.

@DMCREC1

**** Enable Rectangular Barcode**

@DMCREC0

Disable Rectangular Barcode

Character Encoding

@DMCENC0

**** Default Character Encoding**

@DMCENC1

UTF-8

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Data Matrix ECI Output

@DMCECI0

Disable Data Matrix ECI Output

@DMCECI1

**** Enable Data Matrix ECI Output**

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Chapter 4 Data Formatter

Introduction

You may use the Data Formatter to modify MT581W's output. For example, you can use the Data Formatter to insert characters at certain points in barcode data or to suppress/ replace/ send certain characters in barcode data as it is scanned.

Normally, when you scan a barcode, it gets outputted automatically; however, when you create a format, you must use a "send" command (see the "Send Commands" section in this chapter) within the format programming to output data. Multiple data formats can be programmed into MT581W. The maximum size of all data formats created is 2048 characters. By default, the data formatter is disabled. Enable it when required. If you have changed data format settings, and wish to clear all formats and return to the factory defaults, scan the **Default Data Format** code below.

@DFMDEF
Default Data Format

Add a Data Format

Data format is used to edit barcode data. When you create a data format, you must select one of the four labels (Format_0, Format_1, Format_2 and Format_3) for your data format, specify the application scope of data format (such as barcode type and data length) and include formatter commands. Multiple data formats may be created using the same label. When scanned data does not match your data format requirements, you will hear the non-match error beep (if the non-match error beep is ON).

There are two methods to program a data format: Programming with barcodes and programming with serial commands.

Programming with Barcodes

The following explains how to program a data format by scanning the specific barcodes. Scanning any irrelevant barcode or failing to follow the setting procedure will result in programming failure. To find the alphanumeric barcodes needed to create a data format, see the "Digit Barcodes" section in Appendix.

Step 1: Scan the **Enter Setup** barcode.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Step 2: Scan the **Add Data Format** barcode.

@DFMADD

Add Data Format

Step 3: Select a label (Format_0 or Format_1 or Format_2 or Format_3).

Scan a numeric barcode **0** or **1** or **2** or **3** to label this data format Format_0 or Format_1 or Format_2 or Format_3.

Step 4: Select formatter command type.

Specify what type of formatter commands will be used. Scan a numeric barcode “6” to select formatter command type 6. (See the “Formatter Command Type 6” section in this chapter for more information)

Step 5: Set interface type

Scan **999** for any interface type.

Step 6: Set Symbology ID Number

Refer to the “Symbology ID Number” section in Appendix and find the ID number of the symbology to which you want to apply the data format. Scan three numeric barcodes for the symbology ID number. If you wish to create a data format for all symbologies, scan **999**.

Step 7: Set barcode data length

Specify what length of data will be acceptable for this symbology. Scan the four numeric barcodes that represent the data length. 9999 is a universal number, indicating all lengths. For example, 32 characters should be entered as 0032.

Step 8: Enter formatter command

Refer to the “Formatter Command Type 6” section in this chapter. Scan the alphanumeric barcodes that represent the command you need to edit data. For example, when a command is F141, you should scan F141.

Step 9: Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix to save your data format.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Example: Program a Format_0 data format using formatter command type 6, Code 128 containing 10 characters applicable, send all characters followed by “A”.

1. Scan the **Enter Setup** barcode	Enter the Setup mode
2. Scan the **Add Data Format** barcode	Add a data format
3. Scan the **0** barcode	Select Format_0 as the label
4. Scan the **6** barcode	Select formatter command type 6
5. Scan the **9** barcode three times	All interface types applicable
6. Scan the barcodes **002**	Only Code 128 applicable
7. Scan the barcodes **0010**	Only a length of 10 characters applicable
8. Scan the alphanumeric barcodes **F141**	Send all characters followed by “A” (HEX: 41)
9. Scan the **Save** barcode	Save the data format

To streamline the programming process, you may as well generate a batch barcode by inputting the command (e.g. **@DFMADD069990020010F141;**) used to create a data format. See the “Use Batch Barcode” section in Chapter 6 to learn how to put a batch barcode into use.

When creating multiple data formats sharing a label, the formats are separated from each other by a vertical bar (|) in the batch command, e.g. **@DFMADD069990029999F141|069990039999F142|169990049999F143;**.

@SETUPE0
**** Exit Setup**

@SETUPE1
Enter Setup

Enable/Disable Data Formatter

When Data Formatter is disabled, the data format you have enabled becomes invalid.

@DFMENA0
**** Disable Data Formatter**

You may wish to require the data to conform to a data format you have created. The following settings can be applied to your data format:

Enable Data Formatter, Required, Keep Prefix/Suffix: Scanned data that meets your data format requirements is modified accordingly and gets outputted along with prefixes and suffixes (if prefix and suffix are enabled). Any data that does not match your data format requirements generates an error beep (if Non-Match Error Beep is turned ON) and the data in that barcode is not transmitted.

Enable Data Formatter, Required, Drop Prefix/Suffix: Scanned data that meets your data format requirements is modified accordingly and gets outputted without prefixes and suffixes (even if prefix and suffix are enabled). Any data that does not match your data format requirements generates an error beep (if Non-Match Error Beep is turned ON) and the data in that barcode is not transmitted.

Enable Data Formatter, Not Required, Keep Prefix/Suffix: Scanned data that meets your data format requirements is modified accordingly and gets outputted along with prefixes and suffixes (if prefix and suffix are enabled). Barcode data that does not match your data format requirements is transmitted as read along with prefixes and suffixes (if prefix and suffix are enabled).

Enable Data Formatter, Not Required, Drop Prefix/Suffix: Scanned data that meets your data format requirements is modified accordingly and gets outputted without prefixes and suffixes (even if prefix and suffix are enabled). Barcode data that does not match your data format requirements is transmitted as read along with prefixes and suffixes (if prefix and suffix are enabled).

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

@DFMENA1

Enable Data Formatter, Required, Keep Prefix/Suffix

@DFMENA2

Enable Data Formatter, Required, Drop Prefix/Suffix

@DFMENA3

Enable Data Formatter, Not Required, Keep Prefix/Suffix

@DFMENA4

Enable Data Formatter, Not Required, Drop Prefix/Suffix

Non-Match Error Beep

If Non-Match Error Beep is turned ON, MT581W generates an error beep when a barcode is encountered that does not match your required data format.

@DFMTON0

Non-Match Error Beep Off

@DFMTON1

**** Non-Match Error Beep On**

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Data Format Selection

After enabling the Data Formatter, you can select a data format you want to use by scanning the appropriate barcode below.

@DFMUSE0
**** Format_0**

@DFMUSE1
Format_1

@DFMUSE2
Format_2

@DFMUSE3
Format_3

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Change Data Format for a Single Scan

You can switch between data formats for a single scan. The next barcode is scanned using the data format selected here, then reverts to the format you have selected above.

For example, you may have set your engine to use the data format you saved as Format_3. You can switch to Format_1 for a single trigger pull by scanning the **Single Scan – Format_1** barcode below. The next barcode that is scanned uses Format_1, then reverts back to Format_3.

Note: This setting will be lost by removing power from MT581W, or turning off/ rebooting the device.

@DFMSIN0

Single Scan – Format_0

@DFMSIN1

Single Scan – Format_1

@DFMSIN2

Single Scan – Format_2

@DFMSIN3

Single Scan – Format_3

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Clear Data Format

There are two methods to remove data format created from your engine:

Delete one data format: Scan the **Clear One** barcode, a numeric barcode (0-3) and the **Save** barcode. For example, to delete Format_2, you should scan the **Clear One** barcode, the **2** barcode and the **Save** barcode

Delete all data formats: Scan the **Clear All** barcode.

@DFMCAL
Clear All

@DFMCLR
Clear One

Query Data Formats

You may scan the appropriate barcode below to get the information of data format(s) created by you or preset by manufacturer. For instance, if you have added Format_0 as per the example in the “Add a Data Format” section in this chapter, scanning the **Query Current Data Formats** barcode, you will get the result: **Data Format0:069990020010F141;**.

@DFMQCU
Query Current Data Formats

@DFMQFA
Query Preset Data Formats

@SETUPE0
**** Exit Setup**

@SETUPE1
Enter Setup

Chapter 5 Prefix & Suffix

Introduction

A 1D barcode could contain digits, letters, symbols, etc. A 2D barcode could contain more data, such as Chinese characters and other multi-byte characters. However, in real applications, they do not and should not have all information we need, such as barcode type, data acquisition time and delimiter, in order to keep the barcodes short and flexible.

Preffix and suffix are how to fulfill the needs mentioned above. They can be added, removed and modified while the original barcode data remains intact.

Barcode processing procedure:

1. Edit data with Data Formatter
2. Append prefix/suffix
3. Pack data
4. Append terminating character

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Global Settings

Enable/Disable All Prefixes/Suffixes

Disable All Prefixes/Suffixes: Transmit barcode data with no prefix/suffix.

Enable All Prefixes/Suffixes: Allow to append Code ID prefix, AIM ID prefix, custom prefix/suffix and terminating character to the barcode data before the transmission.

@APSENA0

Disable All Prefixes/Suffixes

@APSENA1

Enable All Prefixes/Suffixes

Prefix Sequence

@PRESEQ0

**** Code ID+ Custom +AIM ID**

@PRESEQ1

Custom + Code ID + AIM ID

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Custom Prefix

Enable/Disable Custom Prefix

If custom prefix is enabled, you are allowed to append to the data a user-defined prefix that cannot exceed 10 characters. For example, if the custom prefix is “AB” and the barcode data is “123”, the Host will receive “AB123”.

@CPRENA0
**** Disable Custom Prefix**

@CPRENA1
Enable Custom Prefix

Set Custom Prefix

To set a custom prefix, scan the **Set Custom Prefix** barcode then the numeric barcodes corresponding to the hexadecimal value of a desired prefix then the **Save** barcode.

Note: A custom prefix cannot exceed 10 characters.

@CPRSET
Set Custom Prefix

Example

Set the custom prefix to “CODE” (HEX: 0x43/0x4F/0x44/0x45):

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Custom Prefix** barcode.
3. Scan the numeric barcodes “4”, “3”, “4”, “F”, “4”, “4”, “4” and “5” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Enable Custom Prefix** barcode.
6. Scan the **Exit Setup** barcode.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

AIM ID Prefix

AIM (Automatic Identification Manufacturers) ID defines symbology identifier (For the details, see the “AIM ID Table” section in Appendix). If AIM ID prefix is enabled, MT581W will add the symbology identifier before the scanned data after decoding.

@AIDENA0

**** Disable AIM ID Prefix**

@AIDENA1

Enable AIM ID Prefix

AIM ID is not user programmable.

@SETUPE0

**** Exit Setup**

@SETUPE1
Enter Setup

Code ID Prefix

Code ID can also be used to identify barcode type. Unlike AIM ID, Code ID is user programmable. Code ID can only consist of one or two English letters.

@CIDENA0
**** Disable Code ID Prefix**

@CIDENA1
Enable Code ID Prefix

Restore All Default Code IDs

For the information of default Code IDs, see the “Code ID Table” section in Appendix.

@CIDDEF
Restore All Default Code IDs

Modify Code ID

See the examples below to learn how to modify a Code ID and restore the default Code IDs of all symbologies.

@SETUPE0
**** Exit Setup**

Example

Modify PDF417 Code ID to be "p" (HEX: 0x70):

1. Scan the **Enter Setup** barcode.
2. Scan the **Modify PDF417 Code ID** barcode.
3. Scan the numeric barcodes "7" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Restore the default Code IDs of all symbologies:

1. Scan the **Enter Setup** barcode.
2. Scan the **Restore All Default Code IDs** barcode**.**
3. Scan the **Exit Setup** barcode.

@SETUPE1
Enter Setup

1D symbologies:

@CID002
Modify Code 128 Code ID

@CID003
Modify GS1-128 Code ID

@CID004
Modify EAN-8 Code ID

@CID005
Modify EAN-13 Code ID

@CID006
Modify UPC-E Code ID

@CID007
Modify UPC-A Code ID

@CID008
Modify Interleaved 2 of 5 Code ID

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

@CID009

Modify ITF-14 Code ID

@CID010

Modify ITF-6 Code ID

@CID011

Modify Matrix 2 of 5 Code ID

@CID013

Modify Code 39 Code ID

@CID015

Modify Codabar Code ID

@CID017

Modify Code 93 Code ID

@CID020

Modify AIM 128 Code ID

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

@CID023

Modify ISSN Code ID

@CID024

Modify ISBN Code ID

@CID025

Modify Industrial 25 Code ID

@CID026

Modify Standard 25 Code ID

@CID027

Modify Plessey Code ID

@CID028

Modify Code 11 Code ID

@CID029

Modify MSI-Plessy Code ID

@CID031

Modify GS1 Databar Code ID

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

2D symbologies:

@CID032

Modify PDF417 Code ID

@CID033

Modify QR Code ID

@CID034

Modify Aztec Code ID

@CID035

Modify Data Matrix Code ID

@CID043

Modify Micro QR Code ID

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Custom Suffix

Enable/Disable Custom Suffix

If custom suffix is enabled, you are allowed to append to the data a user-defined suffix that cannot exceed 10 characters. For example, if the custom suffix is “AB” and the barcode data is “123”, the Host will receive “123AB”.

@CSUENA0

**** Disable Custom Suffix**

@CSUENA1

Enable Custom Suffix

Set Custom Suffix

To set a custom suffix, scan the **Set Custom Suffix** barcode then the numeric barcodes corresponding to the hexadecimal value of a desired suffix then the **Save** barcode.

Note: A custom suffix cannot exceed 10 characters.

@CSUSET

Set Custom Suffix

Example

Set the custom suffix to “CODE” (HEX: 0x43/0x4F/0x44/0x45):

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Custom Suffix** barcode.
3. Scan the numeric barcodes “4”, “3”, “4”, “F”, “4”, “4”, “4” and “5” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Enable Custom Suffix** barcode.
6. Scan the **Exit Setup** barcode.

@SETUPE0

**** Exit Setup**

Data Packing

Introduction

Data packing is designed for a specific group of users who want to have the data packed before transmission. Data packing influences data format, so it is advised to disable this feature when it is not required.

Data Packing Options

Disable Data Packing: Transmit decoded data in raw format (unpacketed).

Enable Data Packing, Format 1: Transmit decoded data with the packet format 1 defined below.

Packet format 1: [STX + ATTR + LEN] + [AL_TYPE + DATA] + [LRC]

STX: 0x02

ATTR: 0x00

LEN: Barcode data length is expressed in 2 bytes ranging from 0x0000 (0) to 0xFFFF (65535).

AL_TYPE: 0x36

DATA: Raw barcode data.

LRC: Check digit.
LRC calculation algorithm: computation sequence: 0xFF+LEN+AL_TYPE+DATA; computation method is XOR, byte by byte.

Enable Data Packing, Format 2: Transmit decoded data with the packet format 2 defined below.

Packet format 2: [STX + ATTR + LEN] + [AL_TYPE] + [Symbology_ID + DATA] + [LRC]

STX: 0x02

ATTR: 0x00

LEN: Barcode data length is expressed in 2 bytes ranging from 0x0000 (0) to 0xFFFF (65535).

AL_TYPE: 0x3B

Symbology_ID: The ID number of symbology, 1 byte.

DATA: Raw barcode data.

LRC: Check digit.
LRC calculation algorithm: computation sequence: 0xFF+LEN+AL_TYPE+Symbology_ID+DATA; computation method is XOR, byte by byte.

@SETUPE1

Enter Setup

@PACKAG0

**** Disable Data Packing**

@PACKAG1

Enable Data Packing, Format 1

@PACKAG2

Enable Data Packing, Format 2

@SETUPE0

**** Exit Setup**

@SETUPE1

Enter Setup

Terminating Character Suffix

Enable/Disable Terminating Character Suffix

A terminating character such as carriage return (CR) or carriage return/line feed pair (CRLF) can only be used to mark the end of data, which means nothing can be added after it.

@TSUENA0

Disable Terminating Character Suffix

@TSUENA1

**** Enable Terminating Character Suffix**

Set Terminating Character Suffix

To set a terminating character suffix, scan the **Set Terminating Character Suffix** barcode then the numeric barcodes corresponding to the hexadecimal value of a desired terminating character then the **Save** barcode.

Note: A terminating character suffix cannot exceed 2 characters.

@TSUSET

Set Terminating Character Suffix

@TSUSET0D

**** Set Terminating Character to CR (0x0D)**

@TSUSET0D0A

Set Terminating Character to CRLF (0x0D,0x0A)

@SETUPE0

**** Exit Setup**

Example

Set the terminating character suffix to 0x0A:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Terminating Character Suffix** barcode.
3. Scan the numeric barcodes “0” and “A” from the “Digit Barcodes” section in Appendix.
4. Scan the **Save** barcode from the “Save/Cancel Barcodes” section in Appendix.
5. Scan the **Enable Terminating Character Suffix** barcode.
6. Scan the **Exit Setup** barcode.

@SETUPE1

Enter Setup

Chapter 6 Batch Programming

Introduction

Batch programming enables users to integrate a batch of commands into a single batch barcode.

Listed below are batch programming rules:

1. Command format: Command + Parameter Value.

2. Each command is terminated by a semicolon (;). Note that there is no space between a command and its terminator semicolon.

3. Use the barcode generator software to generate a 2D batch barcode.

Example: Create a batch barcode for internal **Illumination Always On**, **Sense Mode**, **Decode Session Timeout** = 2s:

1. Input the commands:

   @ILLSCN2;SCNMOD2;ORTSET2000;

2. Generate a batch barcode.

When setting up MT581W with the above configuration, scan the **Enable Batch Barcode** barcode and then the batch barcode generated.

@BATCHS

Enable Batch Barcode

@SETUPE1
Enter Setup

Create a Batch Barcode

Batch barcodes can be produced in the format of PDF417, QR Code or Data Matrix.

Example: Create a batch barcode for inernal **Illumination Always On**, **Sense Mode**, **Decode Session Timeout** = 2s:

1. Input the following commands:

   @ILLSCN2;SCNMOD2;ORTSET2000;

2. Generate a PDF417 batch barcode.

@SETUPE0
**** Exit Setup**

@SETUPE1

Enter Setup

Use Batch Barcode

To put a batch barcode into use, scan the following barcodes. (Use the example above.)

@SETUPE1

Enter Setup

@BATCHS

Enable Batch Barcode

Batch Barcode

@SETUPE0

Exit Setup

Appendix

Digit Barcodes

0~9

@DIGIT0

0

@DIGIT1

1

@DIGIT2

2

@DIGIT3

3

@DIGIT4

4

@DIGIT5

5

@DIGIT6

6

@DIGIT7

7

@DIGIT8

8

@DIGIT9

9

A~F

@DIGITA

A

@DIGITB

B

@DIGITC

C

@DIGITD

D

@DIGITE

E

@DIGITF

F

Save/Cancel Barcodes

After reading numeric barcode(s), you need to scan the **Save** barcode to save the data. If you scan the wrong digit(s), you can either scan the **Cancel** barcode and then start the configuration all over again, or scan the **Delete the Last Digit** barcode and then the correct digit, or scan the **Delete All Digits** barcode and then the digits you want.

For instance, after reading the **Maximum Length** barcode and numeric barcodes “1”, “2” and “3”, you scan:

- ✧ **Delete the Last Digit:** The last digit “3” will be removed.
- ✧ **Delete All Digits:** All digits “123” will be removed.
- ✧ **Cancel:** The maximum length configuration will be cancelled. And MT581W is still in the setup mode.

@DIGSAV

Save

@DIGCAN

Cancel

@DIGDEL

Delete the Last Digit

@DIGDAL

Delete All Digits

Factory Defaults Table

Parameter	Factory Default	Remark
System Settings		
Barcode Programming	Disabled (Exit Setup)	
Programming Barcode Data	Do not transmit	
Internal Illumination	Normal	
Aiming	Normal	
Good Read LED	On	
Good Read LED Duration	Short (20ms)	
Power On Beep	On	
Good Read Beep	On	
Good Read Beep Duration	Medium (80ms)	
Good Read Beep Frequency	High (4200Hz)	
Good Read Beep Volume	Loud	
Scan Mode	Level Mode	
Decode Session Timeout	3,000ms.	1-3,600,000ms; 0: Infinite
Image Stabilization Timeout (Sense Mode)	500ms	0-3,000ms
Reread Timeout	Disabled	
	1500ms	0-3,600ms
Reread Timeout Reset	Off	
Image Decoding Timeout	500ms	1-3000ms
Good Read Delay	Disabled, 500ms	1-3,600,000ms
Sensitivity	Sensitivity 5	
Scanning Preference	Normal Mode	
Read Barcode	On	
Decode Area	Whole Area Decoding	
Bad Read Message	Off	
	NG	1-7 characters
Auto Sleep	Disabled	

Time Period from Idle to Sleep	15s	
Default Interface	USB HID Keyboard	
USB Interface		
USB Country Keyboard	US keyboard	USB HID Keyboard
Beep on Unknown Character	Off	USB HID Keyboard
Emulate ALT+Keypad	Off	USB HID Keyboard
Code Page	Code Page 1252 (West European Latin)	USB HID Keyboard
Unicode Encoding	Off	USB HID Keyboard
Emulate Keypad with Leading Zero	On	USB HID Keyboard
Function Key Mapping	Disable	USB HID Keyboard
Inter-Keystroke Delay	No Delay	USB HID Keyboard
Caps Lock	Caps Lock OFF, non-Japanese Keyboard	USB HID Keyboard
Convert Case	No Case Conversion	USB HID Keyboard
Emulate Numeric Keypad 1	Off	USB HID Keyboard
Emulate Numeric Keypad 2	Off	USB HID Keyboard
Fast Mode	Off	USB HID Keyboard
Polling Rate	4ms	USB HID Keyboard
Symbologies		
Global Settings		
Surround GS1 AI's with Parentheses	Do Not Surround GS1 AI's with Parentheses	
Code 128		
Code 128	Enabled	
Maximum Length	48	
Minimum Length	1	
EAN-8		
EAN-8	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not Required	

EAN-13		
EAN-13	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not Required	
EAN-13 Beginning with 290 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 378/379 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 414/419 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 434/439 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 977 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 978 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 979 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 290 Add-On Code Required	Do Not Require Add-On Code	
UPC-E		
UPC-E	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not Required	
Transmit Preamble Character	System Character	
UPC-A		
UPC-A	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not Required	

Transmit Preamble Character	No Preamble	
Interleaved 2 of 5		
Interleaved 2 of 5	Enabled	
Maximum Length	80	
Minimum Length	6	
Check Character Verification	Disabled	
Febraban		
Febraban	Disabled	
Transmit Delay per Character	Disabled	
	70ms	
Transmit Delay per 12 Characters	Disabled	
	500ms	
ITF-14		
ITF-14	Disabled	
ITF-6		
ITF-6	Disabled	
Matrix 2 of 5		
Matrix 2 of 5	Enabled	
Maximum Length	80	
Minimum Length	4	No less than 4
Check Character Verification	Disabled	
Code 39		
Code 39	Enabled	
Maximum Length	48	
Minimum Length	1	
Check Character Verification	Disabled	
Start/Stop Character	Do not transmit	
Code 39 Full ASCII	Disabled	
Code 32 Pharmaceutical (PARAF)	Disabled	
Code 32 Prefix	Disabled	
Code 32 Start/Stop Character	Do not transmit	
Code 32 Check Character	Do not transmit	
Codabar		
Codabar	Enabled	
Maximum Length	60	
Minimum Length	2	

Check Character Verification	Disabled	
Start/Stop Character	Do not transmit	
	ABCD/ABCD	
Code 93		
Code 93	Disabled	
Maximum Length	48	
Minimum Length	1	
Check Character Verification	Do Not Transmit Check Character After Verification	
GS1-128 (UCC/EAN-128)		
GS1-128	Enabled	
Maximum Length	48	
Minimum Length	1	
GS1 Databar		
GS1 Databar	Enabled	
Application Identifier “01”	Transmit	
Code 11		
Code 11	Disabled	
Maximum Length	48	
Minimum Length	4	No less than 4
Check Character Verification	One Check Character, MOD11	
Check Character	Transmit	
ISBN		
ISBN	Disabled	
Set ISBN Format	ISBN-10	
ISSN		
ISSN	Disabled	
Industrial 25		
Industrial 25	Disabled	
Maximum Length	48	
Minimum Length	6	No less than 4
Check Character Verification	Disabled	
Standard 25		
Standard 25	Disabled	
Maximum Length	48	
Minimum Length	6	No less than 4

Check Character Verification	Disabled	
Plessey		
Plessey	Disabled	
Maximum Length	48	
Minimum Length	4	No less than 4
Check Character Verification	Disabled	
MSI-Plessey		
MSI-Plessey	Disabled	
Maximum Length	48	
Minimum Length	4	No less than 4
Check Character Verification	One Check Character, MOD10	
Check Character	Do Not Transmit	
AIM 128		
AIM 128	Disabled	
Maximum Length	48	
Minimum Length	1	
PDF417		
PDF417	Enabled	
Maximum Length	2710	
Minimum Length	1	
PDF417 Twin Code	Single PDF417 Only	
Character Encoding	Default Character Encoding	
PDF417 ECI Output	Enabled	
QR Code		
QR Code	Enabled	
Maximum Length	7089	
Minimum Length	1	
QR Twin Code	Single QR Only	
QR Inverse	Decode Regular QR Barcodes Only	
Character Encoding	Default Character Encoding	
QR ECI Output	Enabled	
Micro QR Code		
Micro QR	Enabled	
Maximum Length	35	
Minimum Length	1	
Aztec		

Aztec Code	Disabled	
Maximum Length	6144	
Minimum Length	1	
Character Encoding	Default Character Encoding	
Aztec ECI Output	Enabled	
Data Matrix		
Data Matrix	Enabled	
Maximum Length	3116	
Minimum Length	1	
Data Matrix Twin Code	Single Data Matrix Only	
Rectangular Barcode	Enabled	
Character Encoding	Default Character Encoding	
Data Matrix ECI Output	Enabled	
Data Formatter		
Data Formatter	Disabled	
Non-Match Error Beep	on	
Data Format Selection	Format_0	
Prefix & Suffix		
All Prefixes/Suffixes	Disabled	
Prefix Sequence	Code ID+ Custom +AIM ID	
Custom Prefix	Disabled	
AIM ID Prefix	Disabled	
Code ID Prefix	Disabled	
Custom Suffix	Disabled	
Data Packing	Disable Data Packing	
Terminating Character Suffix	Enabled 0x0D (Carriage Return)	

AIM ID Table

Symbology	AIM ID	Possible AIM ID Modifiers (m)
Code128	]C0	
GS1-128 (UCC/EAN-128)	]C1	
EAN-8	]E4	
EAN-8 with Addon	]E3	
EAN-13	]E0	
EAN-13 with Addon	]E3	
UPC-E	]E0	
UPC-E with Addon	]E3	
UPC-A	]E0	
UPC-A with Addon	]E3	
Interleaved 2 of 5,	]Im	0, 1, 3
ITF-14	]Im	1, 3
ITF-6	]Im	1, 3
Matrix 2 of 5	]X0	
Code 39, Code 32	]Am	0, 1, 3, 4, 5, 7
Codabar	]Fm	0, 2, 4
Code 93	]G0	
AIM 128	]C2	
ISSN	]X0	
ISBN	]X0	
Industrial 25	]S0	
Standard 25	]R0	
Plessey	]P0	
Code 11	]Hm	0, 1, 3
MSI Plessey	]Mm	0, 1
GS1 Databar (RSS)	]e0	
PDF417	]Lm	0-2
QR Code	]Qm	0-6
Aztec	]zm	0
Data Matrix	]dm	0-6
Micro QR	]Q1	

Note: “m” represents the AIM modifier character. Refer to ISO/IEC 15424:2008 Information technology – Automatic identification and data capture techniques – Data Carrier Identifiers (including Symbology Identifiers) for AIM modifier character details.

Code ID Table

Symbology	Code ID
Code128	j
GS1-128 (UCC/EAN-128)	j
EAN-8	d
EAN-13	d
UPC-E	c
UPC-A	c
Interleaved 2 of 5,	e
ITF-14	e
ITF-6	e
Matrix 2 of 5	v
Code 39, Code 32	b
Codabar	a
Code 93	i
AIM 128	X
ISSN	g
ISBN	B
Industrial 25	I
Standard 25	f
Plessey	n
Code 11	H
MSI Plessey	m
GS1 Databar (RSS)	R
PDF417	r
QR Code	s
Aztec	z
Data Matrix	u
Micro QR	X

Symbology ID Number

Symbology	ID Number
Code 128	002
GS1-128 (UCC/EAN-128)	003
EAN-8	004
EAN-13	005
UPC-E	006
UPC-A	007
Interleaved 2 of 5,	008
ITF-14	009
ITF-6	010
Matrix 2 of 5	011
Code 39, Code 32	013
Codabar	015
Code 93	017
AIM 128	020
ISSN	023
ISBN	024
Industrial 25	025
Standard 25	026
Plessey	027
Code11	028
MSI-Plessey	029
GS1 Databar (RSS)	031
PDF417	032
QR Code	033
Aztec	034
Data Matrix	035
Micro QR	043

ASCII Table

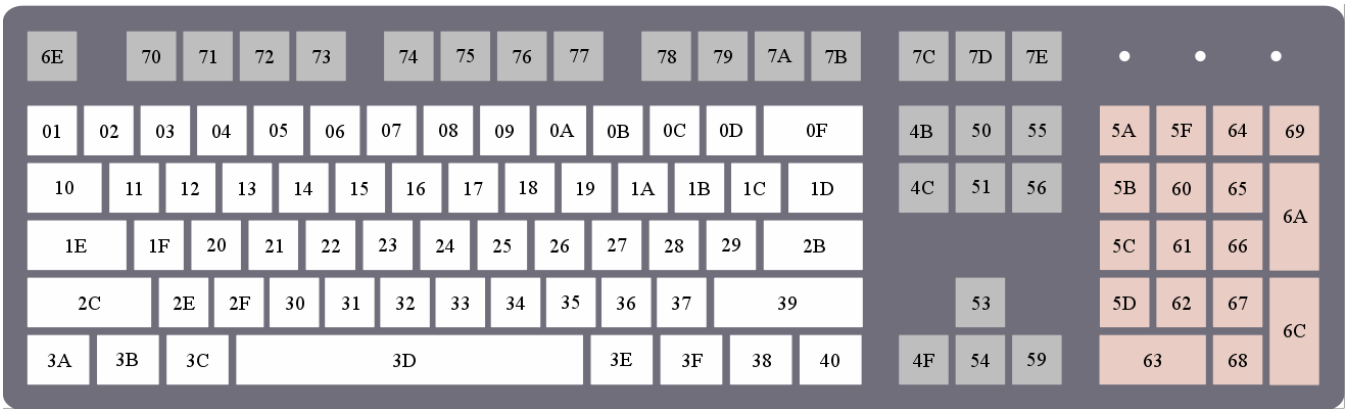
Hex	Dec	Char
00	0	NUL (Null char.)
01	1	SOH (Start of Header)
02	2	STX (Start of Text)
03	3	ETX (End of Text)
04	4	EOT (End of Transmission)
05	5	ENQ (Enquiry)
06	6	ACK (Acknowledgment)
07	7	BEL (Bell)
08	8	BS (Backspace)
09	9	HT (Horizontal Tab)
0a	10	LF (Line Feed)
0b	11	VT (Vertical Tab)
0c	12	FF (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) (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)

Hex	Dec	Char
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	((Left/ Opening 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)

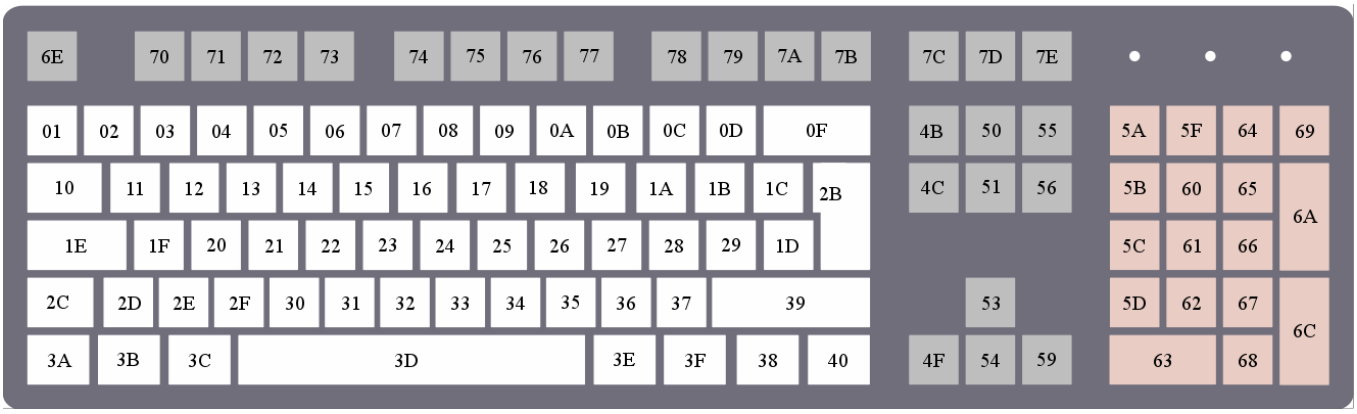
Hex	Dec	Char
3e	62	> (Greater Than)
3f	63	? (Question Mark)
40	64	@ (AT Symbol)
41	65	A
42	66	B
43	67	C
44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4a	74	J
4b	75	K
4c	76	L
4d	77	M
4e	78	N
4f	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5a	90	Z
5b	91	[(Left/ Opening Bracket)
5c	92	\ (Back Slash)
5d	93	] (Right/ Closing Bracket)

Hex	Dec	Char
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)

Unicode Key Maps



104 Key U.S. Style Keyboard



105 Key European Style Keyboard