

Configuration Guide

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Change Scanner Settings

In order to change the scanner settings please follow the sequence below:

1. **OPEN** the scanner Programming Mode by scanning code 1.1.
2. **CHANGE SCANNER SETTINGS** by scanning any of the codes 2.1.x to 10.x.x.
3. **CLOSE** the scanner Programming Mode by scanning code 1.1.

Reading the **OPEN/CLOSE** code 1.1 gives a double tone beep (Low High).

An example:

For changing the baudrate to 4800 the following codes must be scanned successively:

1.1 -> 3.1.4 -> 1.1

After reading a valid barcode in Programming mode the scanner will give a High beep.

The scanner will generate a Low beep after receiving an unexpected code. Reading a code, for example a predefined ASCII character, directly after entering the Programming Mode, is not allowed and the scanner will not accept this data.

At any moment (in Programming Mode) you can scan code 1.2 to close the programming mode without update, or code 1.3 to return to default setting.

Factory default settings

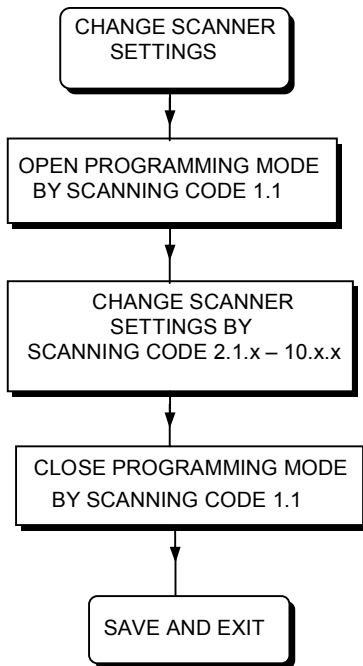
SLEEP MODE	DEFAULT
Sleep mode	After 10 minutes
RS232 COMMUNICATION	DEFAULT
Baudrate	9600
Parity	None
Data bits	8
Stop bits	2
RTS/CTS	Off
Postamble	<CR>
KEYBOARD WEDGE COMMUNICATION	DEFAULT
Terminal type	PC/AT
Keyboard	US Keyboard
Inter character delay	0 mSec
Postamble	Enter (alpha numeric)
USB COMMUNICATION	DEFAULT
Mode	USB Keyboard Emulation
DECODER SELECTION	DEFAULT
EAN/UPC	On (Add-On Off)
Code 128/EAN 128	On
Code 39	On
Code 32	Off
Codabar	Off
Interleaved 2/5	Off
MSI Plessey	Off
Code 93	Off
ISBN	Off
ISSN	Off
GS1 DataBar	Off
GS1 DataBar Expanded	Off
DECODER CONFIGURATION	DEFAULT
Min. length Interleaved 2/5	8
CODE IDENTIFIERS	DEFAULT
Code identifiers	Off

Default message format

CODE	MESSAGE FORMAT
EAN13	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11D12 D13
EAN8	D1 D2 D3 D4 D5 D6 D7 D8
UPCA	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11D12
UPCE	0 D1 D2 D3 D4 D5 D6
Code 128	D1 - Dx
EAN 128]C1 D1 - Dx
Code 39	D1 - Dx
Code 32	D1 - Dx
Codabar	D1 - Dx
Interleaved 2/5	D1 - Dx
MSI Plessey	D1 - Dx
Code 93	D1 - Dx
ISBN	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10
ISSN	D1 D2 D3 D4 D5 D6 D7 D8
GS1 DataBar	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11D12 D13
GS1 DataBar Expanded	D1- D74 (numeric) D1- D42 (alphanumeric)

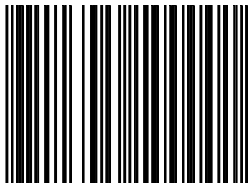
Important: Please note that EAN/UPC codes with Add-On are transmitted without a separator.

Programming flow chart



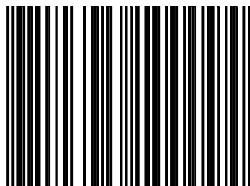
1. General

**OPEN PROGRAMMING MODE OR
CLOSE PROGRAMMING MODE
WITH UPDATE**



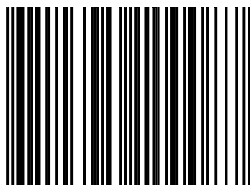
1.1

CLOSE PROGRAMMING MODE WITHOUT UPDATE



1.2

RETURN TO FACTORY DEFAULT SETTINGS

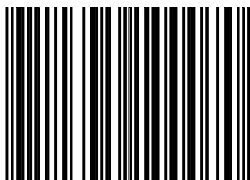


1.3

Use this code to return to the original factory default setting.

Important: Programming Mode is closed after scanning this code.

RETURN TO CUSTOM DEFAULT SETTINGS



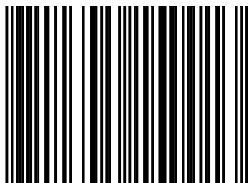
1.4

Important: Programming Mode is closed after scanning this code.

2. Scanner functionality

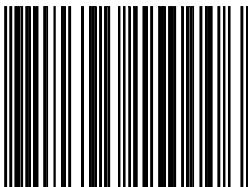
2.1 Speaker settings

SPEAKER FERQUENCY



2.1.1

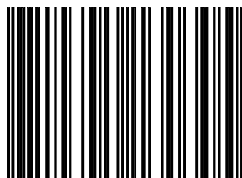
SPEAKER VOLUME



2.1.2

2.2 Sleep mode

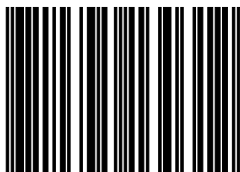
SLEEP MODE OFF



2.2.1

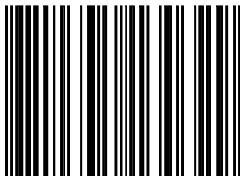
Note: This setting will reduce the product life time.

SLEEP MODE AFTER 10 MINUTES (DEFAULT)



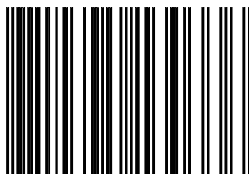
2.2.2

SLEEP MODE AFTER 30 MINUTES



2.2.3

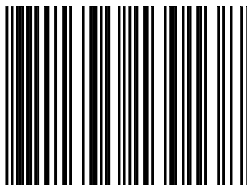
SLEEP MODE AFTER 60 MINUTES



2.2.4

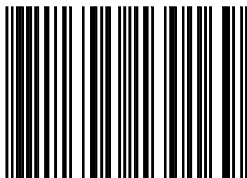
2.3 Scanner timing

SAME CODE DELAY 300MSEC



2.3.4

SAME CODE DELAY 600MSEC

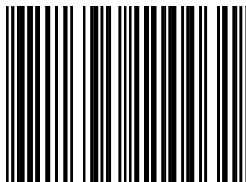


2.3.7

3. Communication parameters

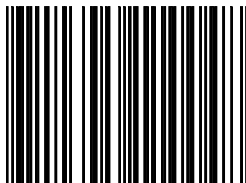
3.1 RS232 communication

BAUDRATE 4800



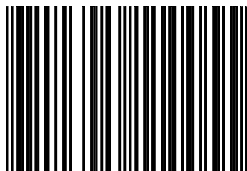
3.1.4

BAUDRATE 9600 (DEFAULT)



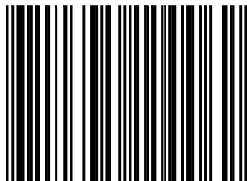
3.1.5

BAUDRATE 19200



3.1.6

BAUDRATE 38400



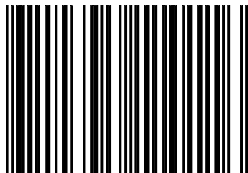
3.1.7

PARITY NONE (DEFAULT)



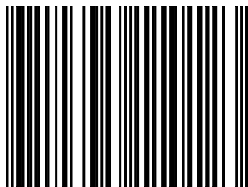
3.1.10

PARITY EVEN



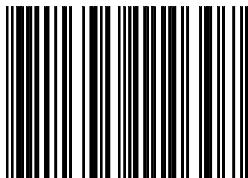
3.1.11

PARITY ODD



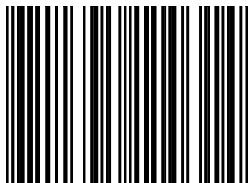
3.1.12

7 DATABITS



3.1.15

8 DATABITS (DEFAULT)



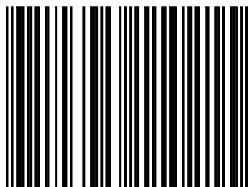
3.1.16

1 STOP BIT



3.1.20

2 STOP BITS (DEFAULT)



3.1.21

RTS/CTS ON (Full duplex)



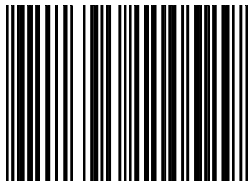
3.1.24

RTS/CTS ON (Half duplex)



3.1.25

RTS/CTS OFF (DEFAULT)



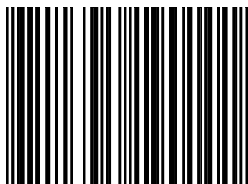
3.1.26

In order to make scanners truly plug and play, a number of pre-set programming bar codes have been developed and implemented into the Omni directional bar code scanner range. Purposely designed towards a number of major PoS systems.

No	Meaning	Code
1	Wincor Nixdorf Beetle Mode A1	3.1.30
6	Fujitsu-ICL Mode	3.1.35

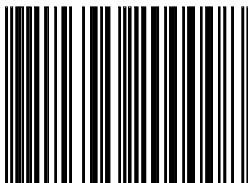
Note: for a complete overview pre-set programming bar codes see another Extended Configuration Guide.

RS232 PRESET 1



3.1.30

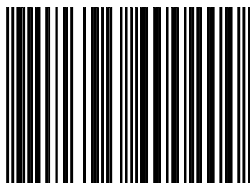
RS232 PRESET 6



3.1.35

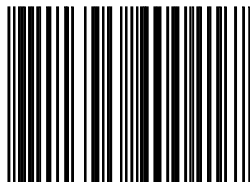
3.4 Keyboard Wedge Communication

INTERNATIONAL KEYBOARD (ALT METHOD)



3.4.10

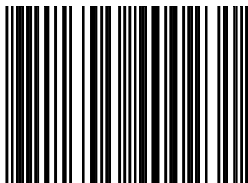
US KEYBOARD (DEFAULT)



3.4.11

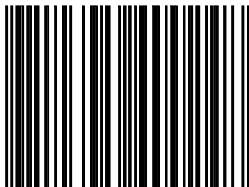
We recommend this setting in case your system does not accept the default (ALT) KBW communication method.

FRENCH KEYBOARD



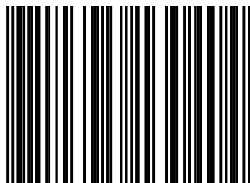
3.4.13

GERMAN KEYBOARD



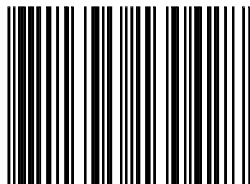
3.4.14

INTER CHARACTER DELAY 0MSEC(DEFAULT)



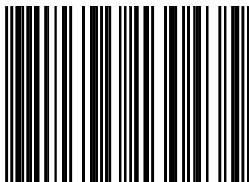
3.4.35

INTER CHARACTER DELAY 2MSEC



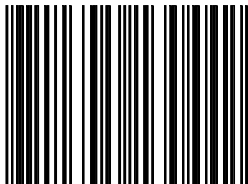
3.4.37

INTER CHARACTER DELAY 5MSEC



3.4.38

INTER CHARACTER DELAY 10MSEC



3.4.39

3.5 USB Communication

3.5 USB SETTINGS

For scanners with integrated USB-interface, you may activate this interface by connecting to appropriate communication cable.

Depending on the firmware version ins the scanner, various protocol versions may be possible:

1. USB Keyboard Emulation (default)
2. USB IBM fixed POS scanner
3. USB IBM handheld scanner emulation

Important: Reset (re-power) the scanner after changing one of the options listed above.

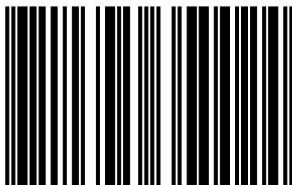
When using USB Keyboard Emulation, you can select different keyboard options using the programming codes from Chapter 3.4.

USB KEYBOARD EMULATION (DEFAULT)



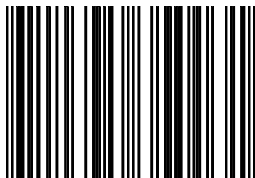
3.5.1

USB IBM FIXED POS SCANNER



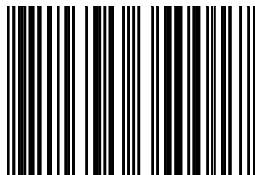
3.5.2

USB IBM HANDHELD SCANNER EMULATION



3.5.3

USB COMPORT EMULATION

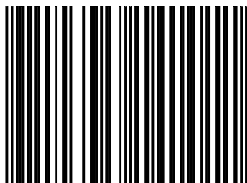


3.5.4

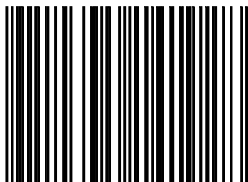
4. Decoding parameters

4.1 Decoder selection

EAN/UPC ON + ADDON OFF (DEFAULT)



4.1.1

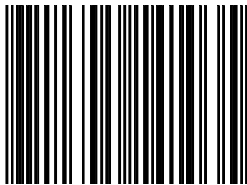
EAN/UPC ON + ADDON ON**4.1.3**

Important: Add-On codes are optional. The scanner will accept bar codes with or without Add-On.

If the scanner reads an EAN/UPC code without Add-On, the scanner will look for a certain extra time for an Add-On.

If this time has elapsed and no Add-On is found, the scanner will just send the EAN/UPC main code.

**EAN/UPC + ADDON MANDATORY ON
(FOR 378/379/414/419/434/439/529/977)**



4.1.5

Important: After scanning this code, EAN-13 bar codes starting with 378, 379, 414, 419, 434, 439, 529 or 977 will only be accepted including Add-On. If no Add-On has been found, the bar code will not be accepted.

Bar codes starting with different characters are accepted with or without Add-On.

CODE 128/EAN 128 ON



4.1.20

CODE 128/EAN 128 OFF



4.1.21

CODE 39 ON



4.1.25

CODE 39 FULL ASCII ON



4.1.26

CODE 32 ON



4.1.27

CODE 39/CODE 32 OFF



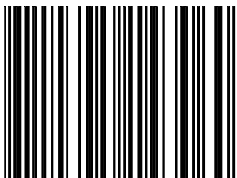
4.1.28

CODABAR ON



4.1.30

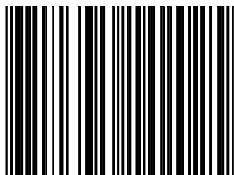
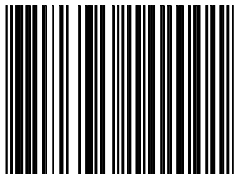
CODABAR OFF



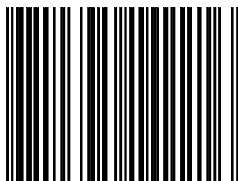
4.1.31

INTERLEAVED 2/5 ON

It is mandatory to select a minimum code length using the appropriate bar code in paragraph 4.2 to prevent short reads.

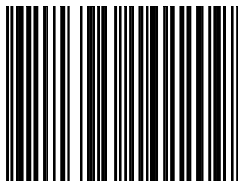
**4.1.35****INTERLEAVED 2/5 OFF****4.1.36**

MSI PLESSEY ON



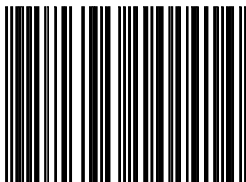
4.1.39

MSI PLESSEY OFF



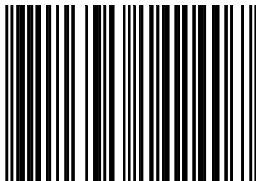
4.1.40

CODE 93 ON



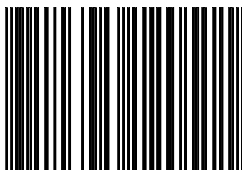
4.1.41

CODE 93 OFF



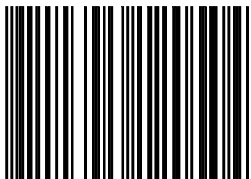
4.1.42

ISBN ON



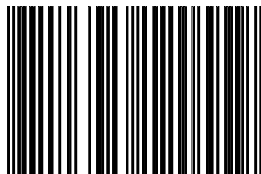
4.1.43

ISBN OFF



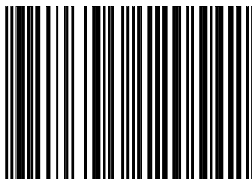
4.1.44

ISSN ON



4.1.45

ISSN OFF



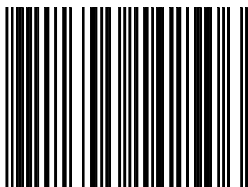
4.1.46

GS1 DATABAR ON



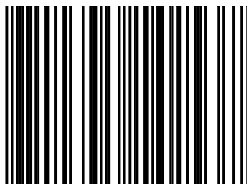
4.1.47

GS1 DATABAR OFF



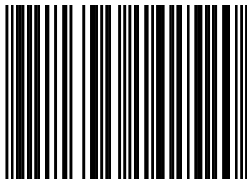
4.1.48

GS1 DATABAR EXPANDED ON



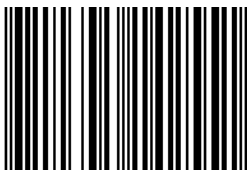
4.1.49

GS1 DATABAR EXPANDED OFF



4.1.50

GS1 DATABAR LIMITED ON



4.1.51

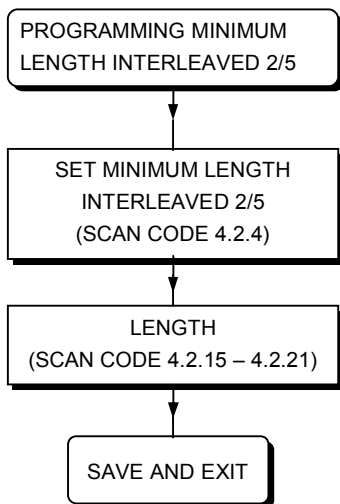
GS1 DATABAR LIMITED OFF



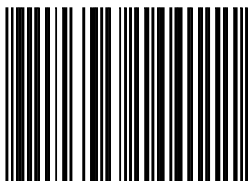
4.1.52

4.2 Decoder configuration

Programming flow chart for minimum length Interleaved 2/5

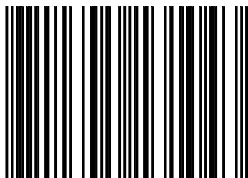


SET MIN. LENGTH INTERLEAVED 2/5



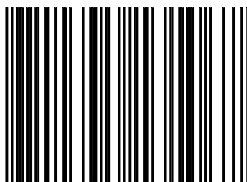
4.2.4

LENGTH = 4



4.2.15

LENGTH = 6



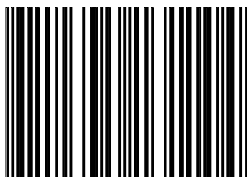
4.2.16

LENGTH = 8 (DEFAULT)



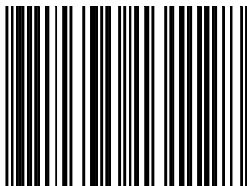
4.2.17

LENGTH = 10



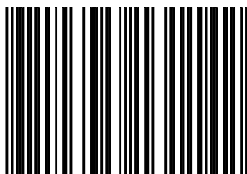
4.2.18

LENGTH = 12



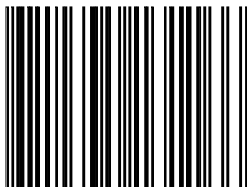
4.2.19

LENGTH = 14



4.2.20

LENGTH = 16



4.2.21

5. Data formatting

5.1 Preambles

Programming sequence preambles

The scanner can be programmed to output bar code data according to the following format:

[PREAMBLE STRING] [BAR CODE DATA]

The preamble string is limited to a maximum length of 3 characters. Use the chart on the next page to program the preamble string.

Example:

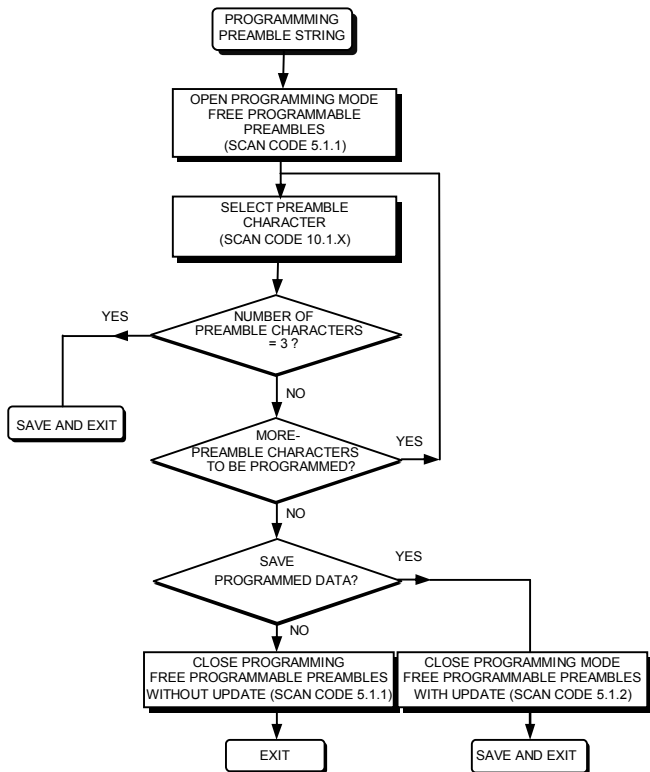
To send a <STX> in front of the bar code, scan successively (while in Programming Mode)

- 5.1.1 Free programmable preambles: Open Programming mode
- 10.1.2 <STX>
- 5.1.2 Free programmable preambles: Close programming mode with update

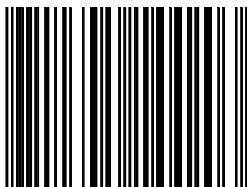
As a result, the scanner will give the following bar code data output:

[<STX>] [BAR CODE DATA]

Programming flow chart preambles

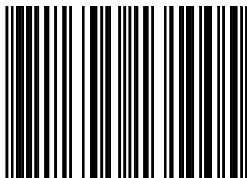


**FREE PROGRAMMABLE PREAMBLES:
OPEN PROGRAMMING MODE / CLOSE
PROGRAMMING MODE WITHOUT UPDATE**



5.1.1

**FREE PROGRAMMABLE PREAMBLES:
CLOSE PROGRAMMING MODE WITH UPDATE**



5.1.2

5.2 Postambles

Programming sequence postambles

The scanner can be programmed to output bar code data according to the following format:

[BAR CODE DATA] [POSTAMBLE STRING]

The postamble string is limited to a maximum length of 3 characters. Use the chart on the next page to program the preamble string.

Example:

To send a <ETX> after of the bar code, scan successively (while in Programming Mode)

5.2.5 Free programmable postambles:

Open Programming mode

10.1.3 <ETX>

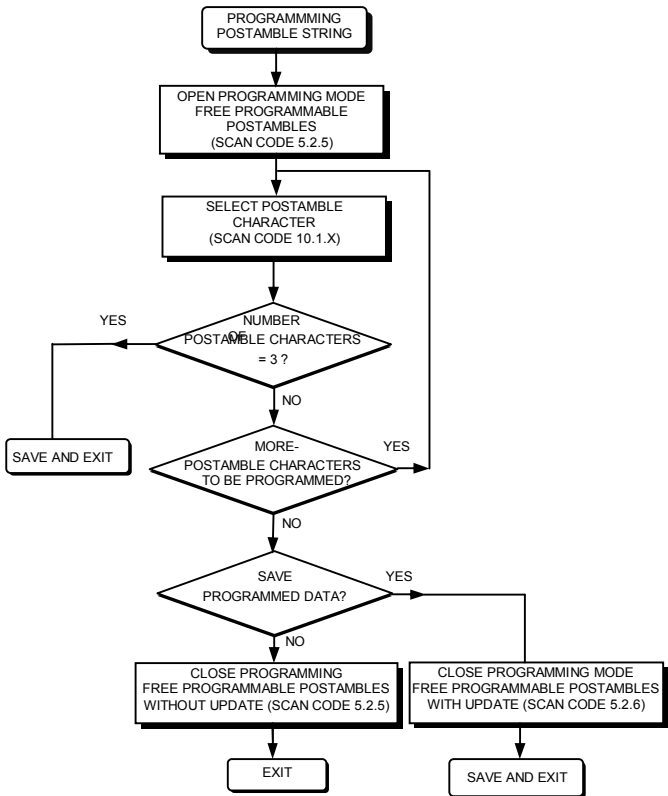
5.2.6 Free programmable postambles:

Close programming mode with update

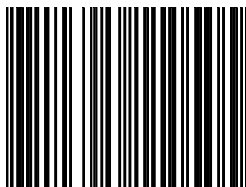
As a result, the scanner will give the following bar code data output:

[BAR CODE DATA] [<ETX>]

Programming flow chart postambles

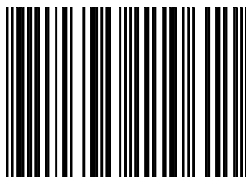


PREDEFINED POSTAMBLE = CR



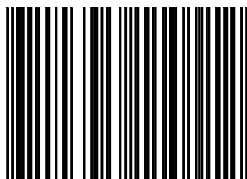
5.2.1

PREDEFINED POSTAMBLE = LF



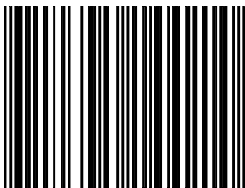
5.2.2

PREDEFINED POSTAMBLE = CR + LF



5.2.3

**FREE PROGRAMMABLE POSTAMBLES:
OPEN PROGRAMMING MODE / CLOSE
PROGRAMMING MODE WITHOUT UPDATE**



5.2.5

**FREE PROGRAMMABLE POSTAMBLES:
CLOSE PROGRAMMING MODE WITH UPDATE**



5.2.6

5.3 Code identifiers

Set message format with code identifiers

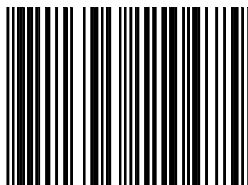
A code identifier is a data string, giving information to the host system concerning the bar code type that has been read. After scanning code 5.3.1. the scanner is programmed to transmit data according to the following format:

CODE	CODE	MESSAGE FORMAT
EAN13	F	D1 - D13
EAN8	FF	D1 - D8
UPCA	A	D1 - D12
UPCE	E	0 D1 - D6
Code 128	#	D1 - Dx
EAN 128	P	JC1 D1 - Dx
Code 39	*	D1 - Dx
Code 32	*	D1 - Dx
Codabar	%	D1 - Dx
Interleaved 2/5	i	D1 - Dx
MSI Plessey	O	D1 - Dx
Code 93	L	D1 - Dx
ISBN	F	D1 - D10
ISSN	F	D1 - D8
GS1 DataBar	U	D1 - D14
GS1 DataBar Expanded	W	D1 - D74 (numeric) or D1 - D42 (alphanumeric)

Important: Please note that the UPCE format will be changed. The scanner will transmit UPCE codes with leading zero and without check digit.

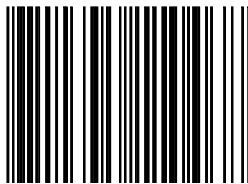
To return--- default format without code identifiers scan code 5.3.2.

**SET MESSAGE FORMAT WITH
CODE IDENTIFIERS**



5.3.1

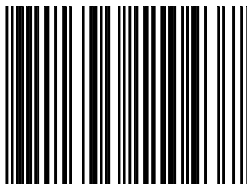
**SET MESSAGE FORMAT WITHOUT
CODE IDENTIFIERS**



5.3.2

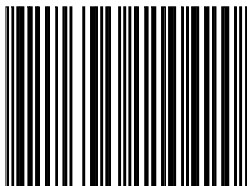
5.4 Code representation

**UPCE FORMAT
WITH LEADING ZERO**



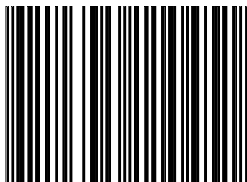
5.4.7

**UPCE FORMAT
WITHOUT LEADING ZERO**



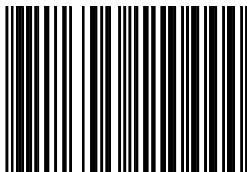
5.4.8

**UPCE FORMAT
WITH CHECK DIGIT**



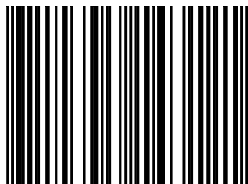
5.4.9

**UPCE FORMAT
WITHOUT CHECK DIGIT**



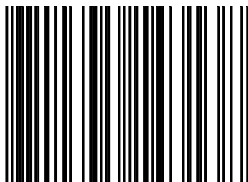
5.4.10

**EAN 128
CODE IDENTIFIER]C1 ON**



5.4.15

**EAN 128
CODE IDENTIFIER]C1 OFF**

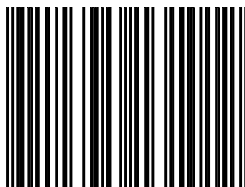


5.4.16

Appendices

A. Predefined ASCII characters

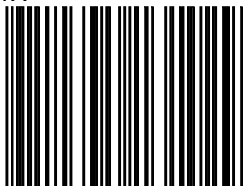
SOH



10.1.1

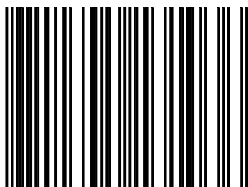
STX

STX



10.1.2

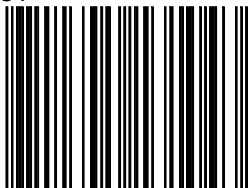
ETX



10.1.3

EOT

EOT

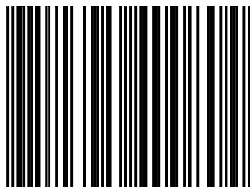


10.1.4

B. Special keys

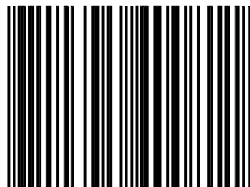
On the following pages you find some special key programming bar codes, related to KBW communication. These codes are also applicable in USB interface with USB keyboard emulation.

TAB



6.1.30

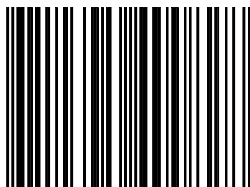
ENTER (ALPHANUMERIC)



6.1.31



ENTER (NUMERIC)



6.1.32