
CONFIGURATION GUIDE

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Note: Due to product improvement programs, specifications and features are subject to change without prior notice.

P/N: 0145-SIS0071 May 2013

Configuration Guide

Programming with barcodes

The BARCODE PROGRAMMING feature gives the possibility to change scanner settings without any tools or dismounting the scanner from the check stand.

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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	International (ALT Method) +
Inter character delay	2 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

Note: + In Asian Mode, it is set at US Keyboard.

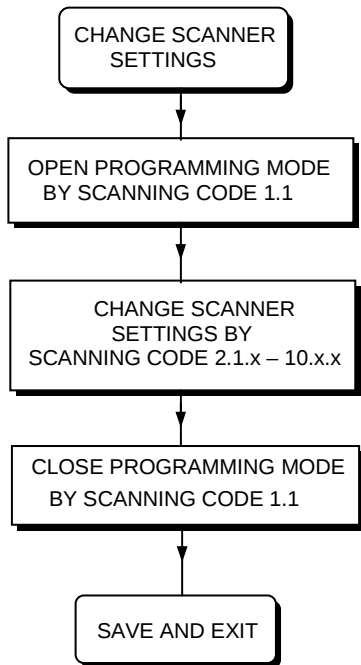
++ In Asian Mode, it is set at 0 mSec.

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)

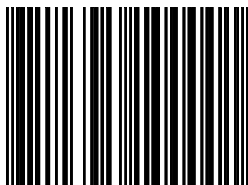
Important: Please note that EAN/UPC codes with Add-On are transmitted without a separator.

Programming flow chart



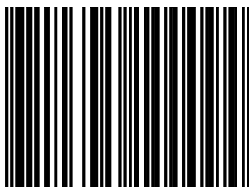
1. General

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



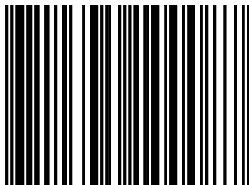
1.1

CLOSE PROGRAMMING MODE WITHOUT UPDATE



1.2

RETURN TO FACTORY DEFAULT SETTINGS

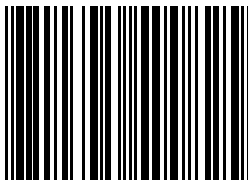


1.3

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

Important: Programming Mode is closed after scanning this code.

EMEA MODE

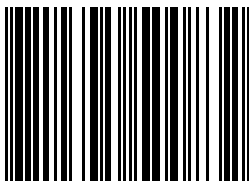


1.8

Note: For European, Middle East and African countries, read the following bar codes to set in EMEA mode.

1.1 → 1.8 → 1.3

ASIA MODE



1.9

Note: For Asian and other countries (except European, Middle East and African countries), read the following bar codes to set in Asia mode.

1.1 → 1.9 → 1.3

FIRMWARE VERSION



1.15

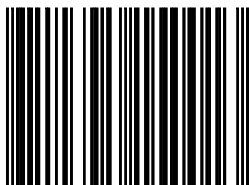
Note: Output the firmware version by read the following bar codes:

1.1 → 1.15 → 1.1

2. Scanner functionality

2.1 Speaker settings

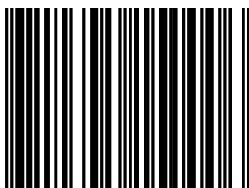
SPEAKER FERQUENCY



2.1.1

Note: Repeat reading this bar code to obtain different tone.

SPEAKER VOLUME

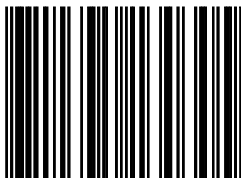


2.1.2

Note: Repeat reading this bar code to obtain different volume.

2.2 Sleep mode

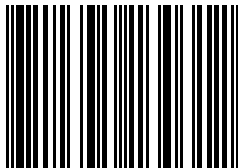
SLEEP MODE OFF



2.2.1

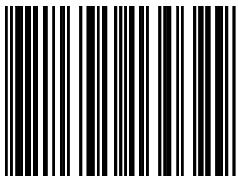
Note: This setting will reduce the product life time.

SLEEP MODE AFTER 10 MINUTES (DEFAULT)



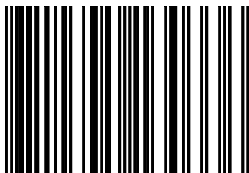
2.2.2

SLEEP MODE AFTER 30 MINUTES



2.2.3

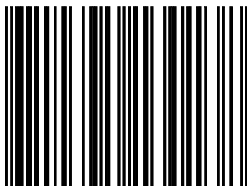
SLEEP MODE AFTER 60 MINUTES



2.2.4

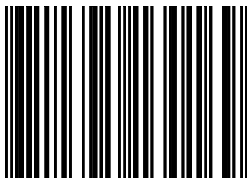
2.3 Scanner timing

SAME CODE DELAY 300MSEC



2.3.4

SAME CODE DELAY 600MSEC

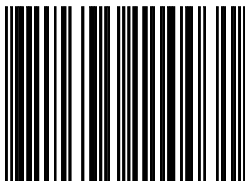


2.3.7

3. Communication parameters

3.1 RS232 communication

BAUDRATE 4800



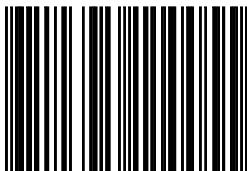
3.1.4

BAUDRATE 9600 (DEFAULT)



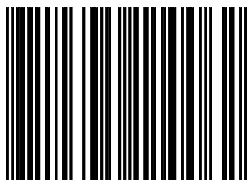
3.1.5

BAUDRATE 19200



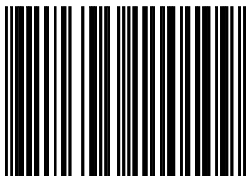
3.1.6

BAUDRATE 38400



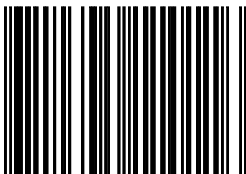
3.1.7

PARITY NONE (DEFAULT)



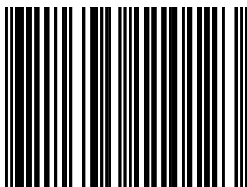
3.1.10

PARITY EVEN



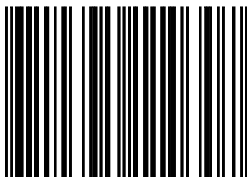
3.1.11

PARITY ODD



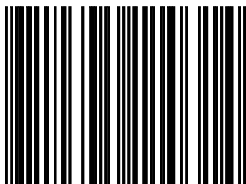
3.1.12

7 DATABITS



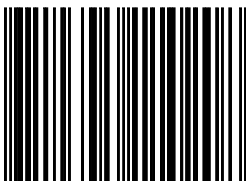
3.1.15

8 DATABITS (DEFAULT)



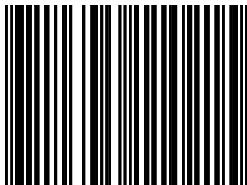
3.1.16

1 STOP BIT



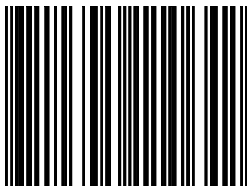
3.1.20

2 STOP BITS (DEFAULT)



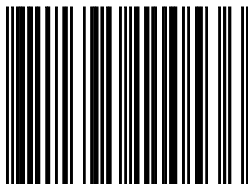
3.1.21

RTS/CTS ON (Full duplex)



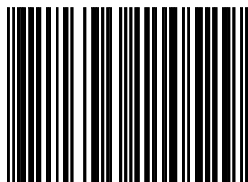
3.1.24

RTS/CTS ON (Half duplex)



3.1.25

RTS/CTS OFF (DEFAULT)

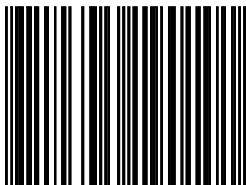


3.1.26

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 design towards a number of major PoS systems.

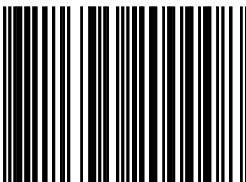
No	Meaning	Code
1	Wincor Nixdorf Beetle Mode A1	3.1.30
6	Fujitsu-ICL Mode	3.1.35

RS232 PRESET 1



3.1.30

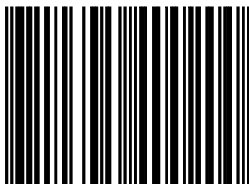
RS232 PRESET 6



3.1.35

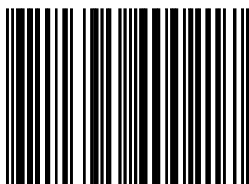
3.4 Keyboard Wedge Communication

INTERNATIONAL KEYBOARD (ALT METHOD) (DEFAULT)



3.4.10

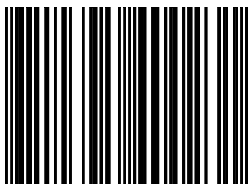
US KEYBOARD



3.4.11

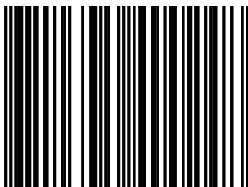
We recommend US KEYBOARD, in case your system does not accept the default (ALT) KBW communication method.

FRENCH KEYBOARD



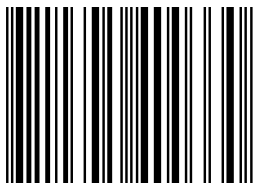
3.4.13

GERMAN KEYBOARD



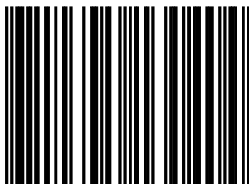
3.4.14

JAPANESE KEYBOARD



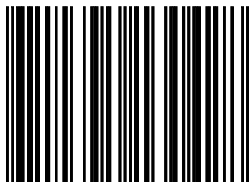
3.4.15

INTER CHARACTER DELAY 0MSEC



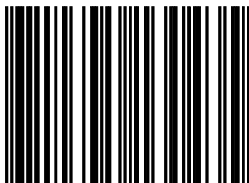
3.4.35

INTER CHARACTER DELAY 2MSEC(DEFAULT)



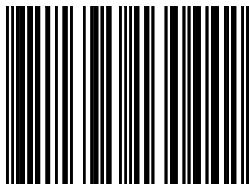
3.4.37

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.

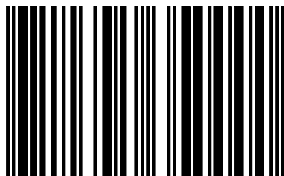
Depending on the firmware version of the scanner, various protocol versions may be possible:

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.

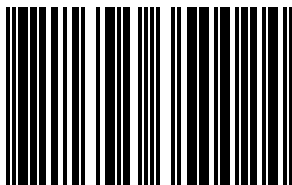
When using USB Keyboard Emulation, you can select different keyboard options using the programming codes from Chapter 3.4.

USB KEYBOARD EMULATION (DEFAULT)



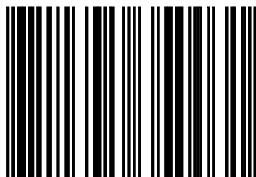
3.5.1

USB IBM FIXED POS SCANNER



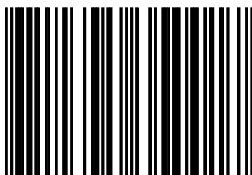
3.5.2

USB IBM HANDHELD SCANNER EMULATION



3.5.3

USB COMPORT EMULATION

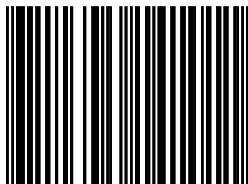


3.5.4

4. Decoding parameters

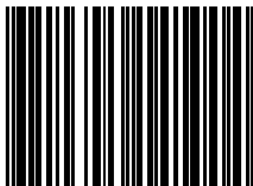
4.1 Decoder selection

EAN/UPC ON + ADDON OFF (DEFAULT)



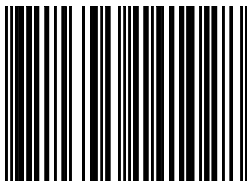
4.1.1

EAN/UPC OFF + ADDON OFF



4.1.2

EAN/UPC ON + ADDON ON



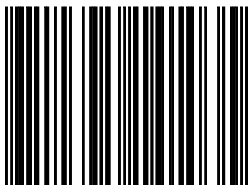
4.1.3

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



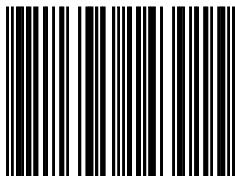
4.1.20

CODE 128/EAN 128 OFF



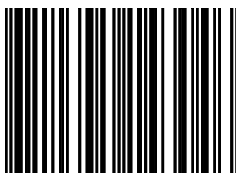
4.1.21

CODE 39 ON



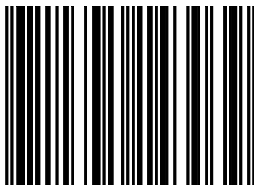
4.1.25

CODE 39 FULL ASCII ON



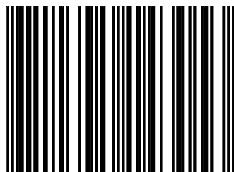
4.1.26

CODE 32 ON



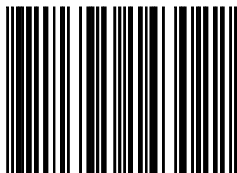
4.1.27

CODE 39/CODE 32 OFF



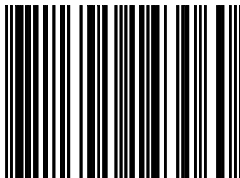
4.1.28

CODABAR ON



4.1.30

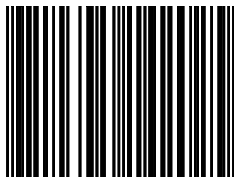
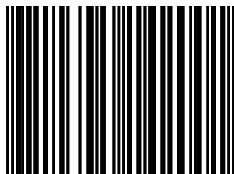
CODABAR OFF



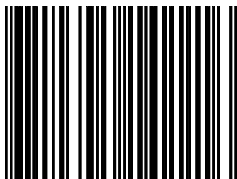
4.1.31

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.

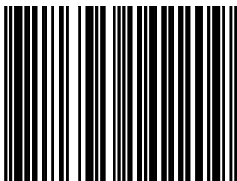
**4.1.35****INTERLEAVED 2/5 OFF****4.1.36**

MSI PLESSEY ON



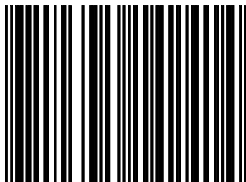
4.1.39

MSI PLESSEY OFF



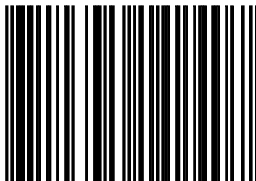
4.1.40

CODE 93 ON



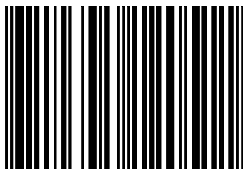
4.1.41

CODE 93 OFF



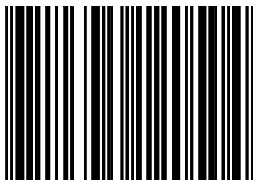
4.1.42

ISBN ON



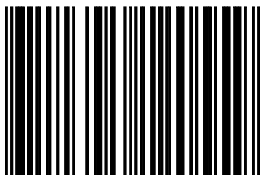
4.1.43

ISBN OFF



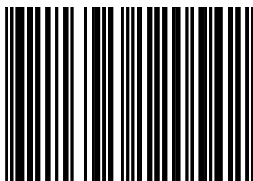
4.1.44

ISSN ON



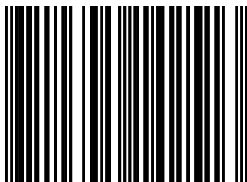
4.1.45

ISSN OFF



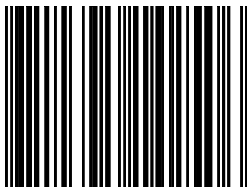
4.1.46

GS1 DATABAR ON



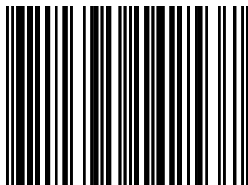
4.1.47

GS1 DATABAR OFF



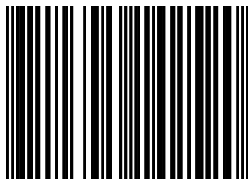
4.1.48

GS1 DATABAR EXPANDED ON



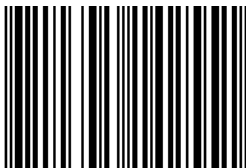
4.1.49

GS1 DATABAR EXPANDED OFF



4.1.50

GS1 DATABAR LIMITED ON



4.1.51

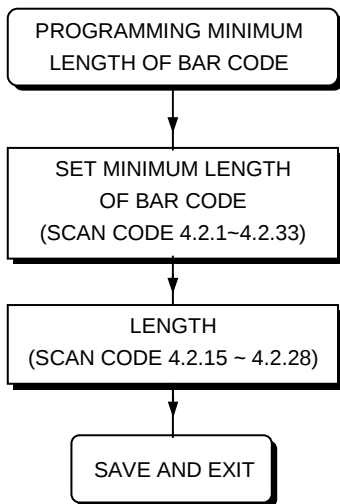
GS1 DATABAR LIMITED OFF



4.1.52

4.2 Decoder configuration

Programming flow chart for minimum length of bar code



SET MIN. LENGTH CODE128



4.2.1

SET MIN. LENGTH CODE39



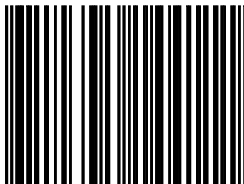
4.2.2

SET MIN. LENGTH CODABAR



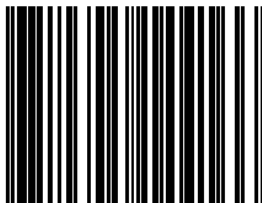
4.2.3

SET MIN. LENGTH INTERLEAVED 2/5



4.2.4

SET MIN. LENGTH MSI Plessey



4.2.32

SET MIN. LENGTH CODE93



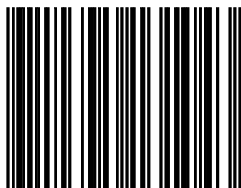
4.2.33

LENGTH = 3



4.2.15

LENGTH = 4



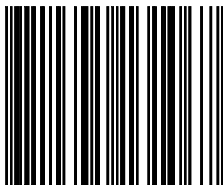
4.2.16

LENGTH = 5



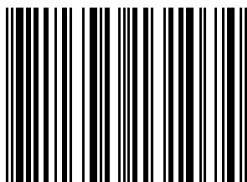
4.2.17

LENGTH = 6



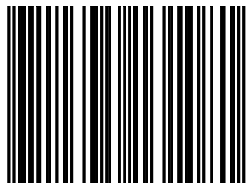
4.2.18

LENGTH = 7



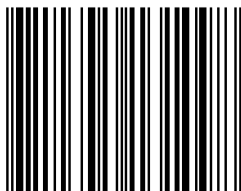
4.2.19

LENGTH = 8



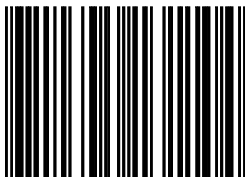
4.2.20

LENGTH =9



4.2.21

LENGTH = 10



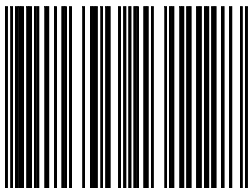
4.2.22

LENGTH = 11



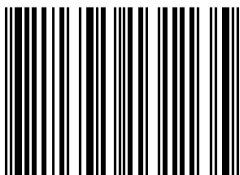
4.2.23

LENGTH = 12



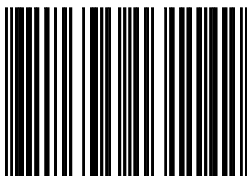
4.2.24

LENGTH = 13



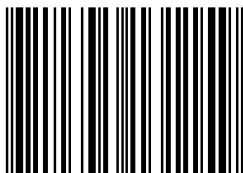
4.2.25

LENGTH = 14



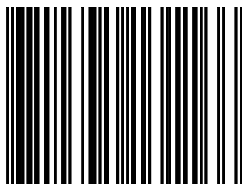
4.2.26

LENGTH = 15



4.2.27

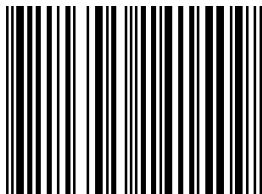
LENGTH = 16



4.2.28

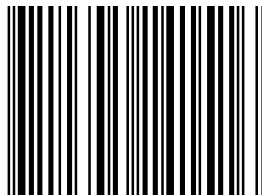
4.4 Japanese book code

**DISABLE 978/192 JAPANESE BOOK
CODE(DEFAULT)**



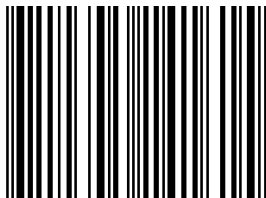
4.4.1

ENABLE 978/192 JAPANESE BOOK CODE



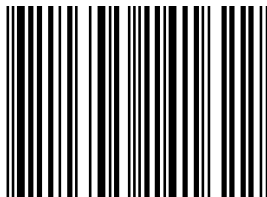
4.4.2

**ENABLE JAPANESE BOOK CODE
SEPARATOR (DEFAULT)**



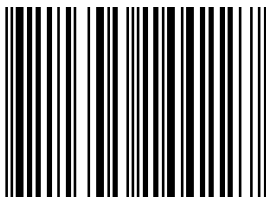
4.4.5

**DISABLE JAPANESE BOOK CODE
SEPARATOR**



4.4.6

**OPEN PROGRAMMING JAPANESE BOOK
CODE SEPARATOR (ONE CHARACTER)**



4.4.7

Note: Only one separator is available. To set Japanese book code separator, scan:

1.1 → 4.4.7 → ASCII code → 1.1

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)

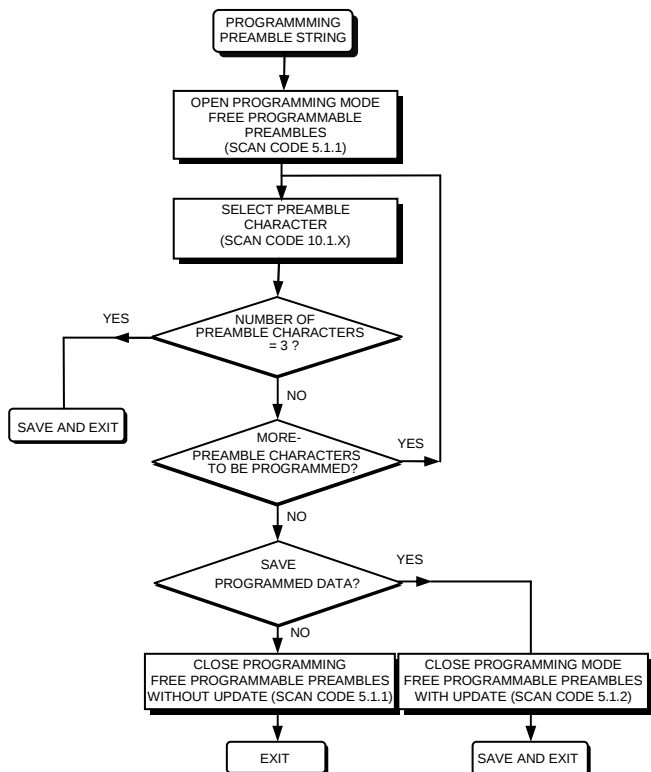
5.1.1 Free programmable preambles: Open Programming mode

10.1.2 <STX>

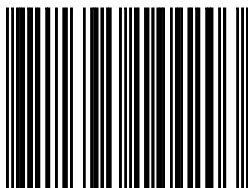
5.1.2 Free programmable preambles: Close programming mode with update

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

Programming flow chart preambles

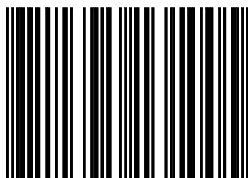


**FREE PROGRAMMABLE PREAMBLES:
OPEN PROGRAMMING MODE / CLOSE
PROGRAMMING MODE WITHOUT UPDATE**



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 postamble string.

Example:

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

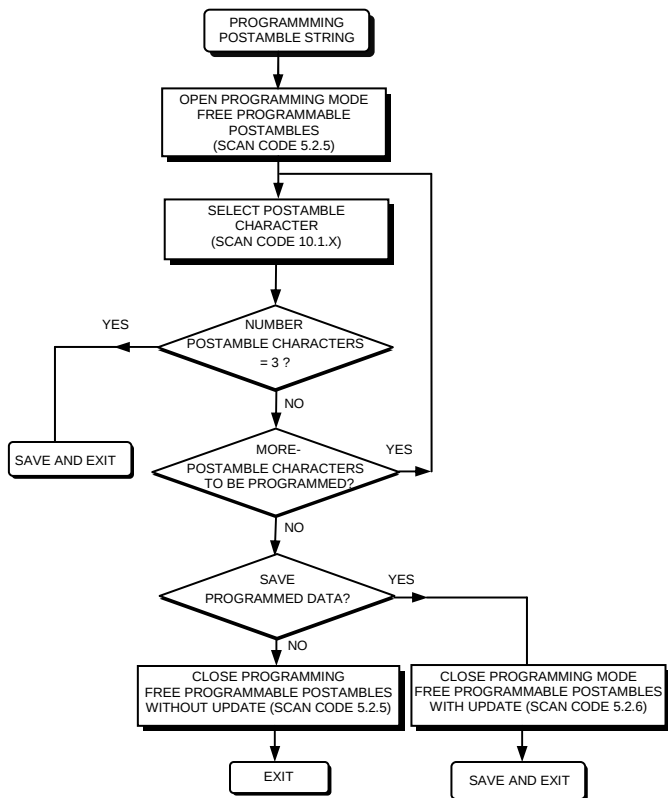
5.2.5 Free programmable postambles:
Open Programming mode

10.1.3 <ETX>

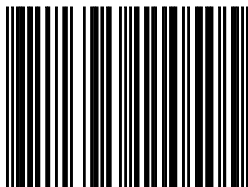
5.2.6 Free programmable postambles:
Close programming mode with update

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

Programming flow chart postambles

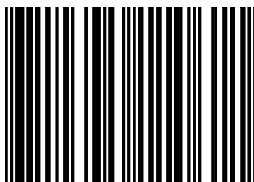


PREDEFINED POSTAMBLE = CR(DEFAULT)



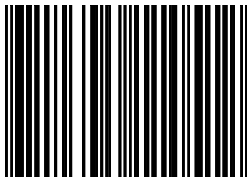
5.2.1

PREDEFINED POSTAMBLE = LF



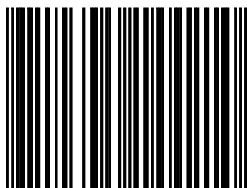
5.2.2

PREDEFINED POSTAMBLE = CR + LF



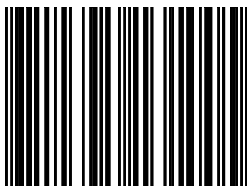
5.2.3

**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

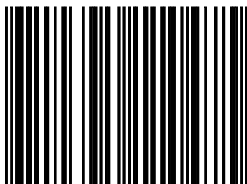
A code identifier is a data string, giving information to the host system concerning the bar code type that has been read. After scanning code 5.3.1, the scanner is programmed to transmit data according to the following format:

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.

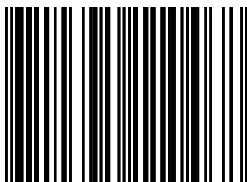
To return to default format without code identifiers scan code 5.3.2.

SET MESSAGE FORMAT WITH CODE IDENTIFIERS



5.3.1

SET MESSAGE FORMAT WITHOUT CODE IDENTIFIERS



5.3.2

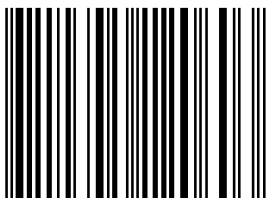
2 versions of preset code identifier are available. The comparison between default version and Datalogic version is listed below.

	Default	Datalogic
EAN13	F	F
EAN8	FF	FF
UPCA	A	A
UPCE	E	E
Code 128	#	#
EAN128	P	null(none)
Code 39	*	*
Code32	*	p
ITF 25	i	l
Codabar	%	%
Code 93	L	&
MSI/PLESSY	O	@
Databar Omni-directional	U	R4
Databar Limited	V	RL
Databar Expanded	W	RX

Note: Scan code 5.3.4 for Datalogic version.

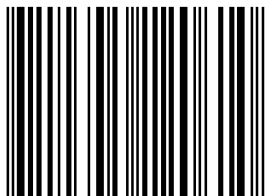
* Datalogic is the trade mark of Datalogic S.p.A.

DEFAULT CODE IDENTIFIER



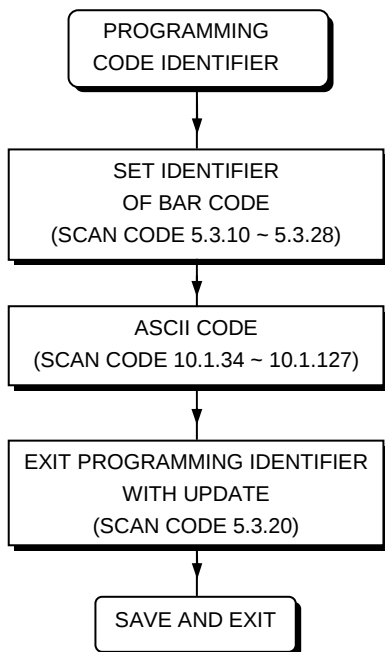
5.3.3

DATALOGIC CODE IDENTIFIER



5.3.4

Programming flow chart for setting code identifier



SETTING IDENTIFIER EAN13



5.3.10

SETTING IDENTIFIER EAN8



5.3.11

SETTING IDENTIFIER UPCA



5.3.12

SETTING IDENTIFIER UPCE



5.3.13

SETTING IDENTIFIER EAN128



5.3.14

SETTING IDENTIFIER CODE128



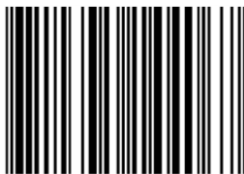
5.3.15

SETTING IDENTIFIER CODE39



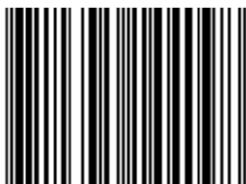
5.3.16

SETTING IDENTIFIER CODE32



5.3.17

SETTING IDENTIFIER CODABAR



5.3.18

SETTING IDENTIFIER INTERLEAVED 2/5



5.3.19

SETTING IDENTIFIER MSI/PLESEY



5.3.27

SETTING IDENTIFIER CODE93



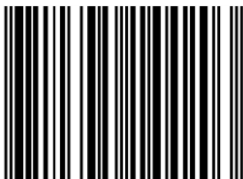
5.3.28

**EXIT PROGRAMMING FREE PROGRAMMABLE
IDENTIFIER WITH UPDATE**



5.3.20

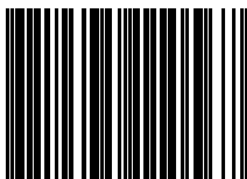
**EXIT PROGRAMMING FREE PROGRAMMABLE
IDENTIFIER WITHOUT UPDATE**



5.3.21

5.4 Code representation

UPCA FORMAT TRANSMITTED AS
UPCA(12 DIGITS)



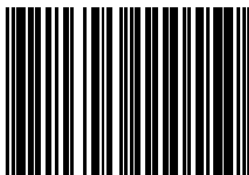
5.4.3

UPCA FORMAT TRANSMITTED AS
EAN13(WITH LEADING ZERO)



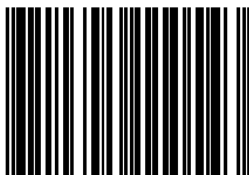
5.4.4

UPCE FORMAT
UPCE TO UPCA EXPANSION ON



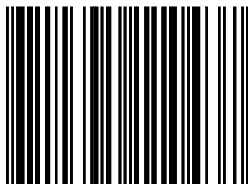
5.4.5

UPCE FORMAT
UPCE TO UPCA EXPANSION OFF



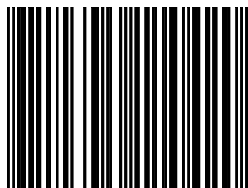
5.4.6

UPCE FORMAT WITH LEADING ZERO



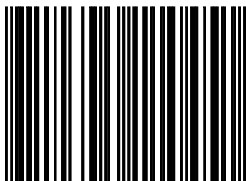
5.4.7

**UPCE FORMAT
WITHOUT LEADING ZERO**



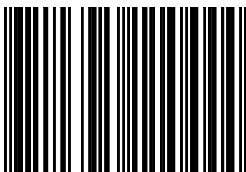
5.4.8

**UPCE FORMAT
WITH CHECK DIGIT**



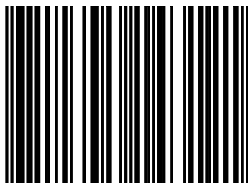
5.4.9

**UPCE FORMAT
WITHOUT CHECK DIGIT**



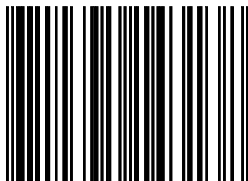
5.4.10

**EAN 128
CODE IDENTIFIER]C1 ON**



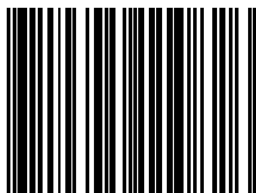
5.4.15

**EAN 128
CODE IDENTIFIER]C1 OFF**



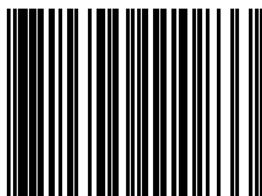
5.4.16

TRANSMIT EAN8 CHECKDIGIT ON



5.4.24

TRANSMIT EAN8 CHECKDIGIT OFF



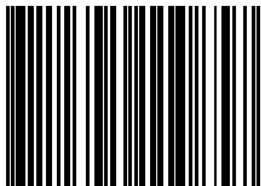
5.4.25

TRANSMIT EAN13 CHECKDIGIT ON



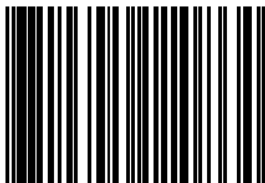
5.4.26

TRANSMIT EAN13 CHECKDIGIT OFF



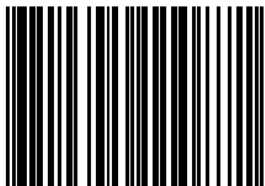
5.4.27

TRANSMIT UPCA CHECKDIGIT ON



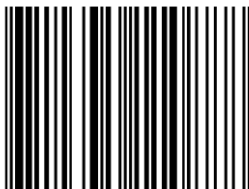
5.4.28

TRANSMIT UPCA CHECKDIGIT OFF



5.4.29

EXPAND EAN8 TO UPCA ON



5.4.30

EXPAND EAN8 TO UPCA OFF



5.4.31

TRANSMIT FIRST DIGIT UPCA OFF



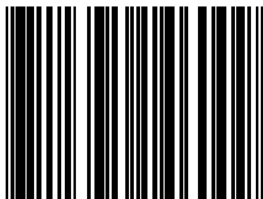
5.4.32

TRANSMIT FIRST DIGIT UPCA ON



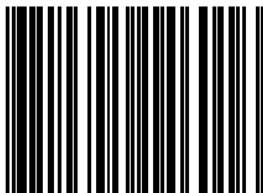
5.4.33

TRANSMISSION OF THE CHECK CHARACTER AT CODE39 OFF



5.4.34

TRANSMISSION OF THE CHECK CHARACTER AT CODE39 ON



5.4.35

VERIFICATION OF THE CHECK CHARACTER AT CODE 39 OFF



5.4.36

VERIFICATION OF THE CHECK CHARACTER AT CODE 39 ON



5.4.37

TRANSMISSION OF THE CHECK CHARACTER AT CODABAR OFF



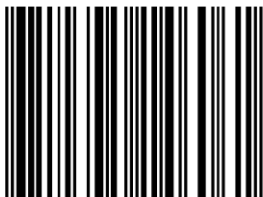
5.4.38

TRANSMISSION OF THE CHECK CHARACTER AT CODABAR ON



5.4.39

VERIFICATION OF THE CHECK CHARACTER AT CODABAR OFF



5.4.40

VERIFICATION OF THE CHECK CHARACTER AT CODABAR ON



5.4.41

TRANSMISSION OF THE CHECK DIGIT AT
INTERLEAVED 2/5 OFF



5.4.42

TRANSMISSION OF THE CHECK DIGIT AT
INTERLEAVED 2/5 ON



5.4.43

**VERIFICATION OF THE CHECK DIGIT AT
INTERLEAVED 2/5 OFF**



5.4.44

**VERIFICATION OF THE CHECK DIGIT AT
INTERLEAVED 2/5 ON**



5.4.45

VERIFICATION MSI/PLESSEY CHECK DIGIT OFF



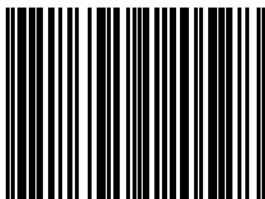
5.4.46

TRANSMISSION CHECK DIGIT MSI/PLESSEY OFF



5.4.51

TRANSMISSION OF THE CHECK DIGIT AT ISBN OFF



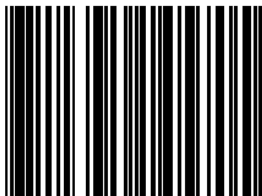
5.4.54

TRANSMISSION OF THE CHECK DIGIT AT ISBN ON



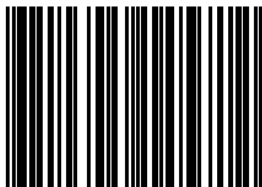
5.4.55

DO NOT TRANSMIT START/STOP AT CODE 39



5.8.22

TRANSMIT START/STOP AT CODE 39



5.8.23

DO NOT TRANSMIT START/STOP CODABAR

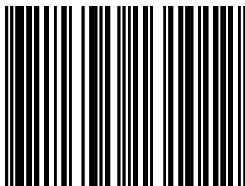


5.8.24

Appendices

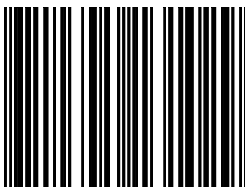
A. Predefined ASCII characters

SOH



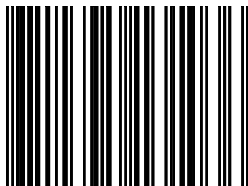
10.1.1

STX



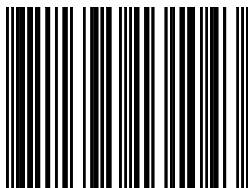
10.1.2

ETX



10.1.3

EOT

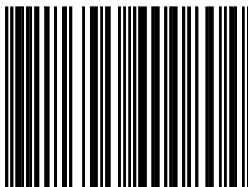


10.1.4

B. Special keys

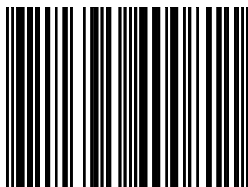
On the following pages you find some special key programming bar codes, related to KBW communication. These codes are also applicable in USB interface with USB keyboard emulation.

TAB



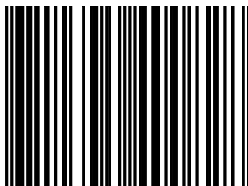
6.1.30

ENTER (ALPHANUMERIC)



6.1.31

ENTER (NUMERIC)



6.1.32

C. ASCII codes

(Refer to ASCII Code Table)

