baracoda™ | Data Capture For Workforce in Motion

Traceability division

D-Fly Programming Guide

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Bluetooth®

SUMMARY

Introduction

The Baracoda D-Fly scanners can be programmed by scanning barcode labels which contain commands for the decoder.
Programming labels must be Code128, with specific starting and ending characters. These labels will always be read, even if Code128 symbology is disabled.

The scanner will acknowledge a good and valid programming barcode label reading with two beeps and a green enlightening of the led. It will give two other beeps (lower tone) and a red enlightening of the led for either an invalid or bad reading.

Please do not read the programming barcodes while being connected to the Baracoda Manager.

Programmable options are divided into 2 groups. The first group includes the options that show the general behaviour of the scanner. The second group sets the decoding parameters for each barcode symbology.

1. General Configuration

1.1. General default settings

The reading of the "Reset to factory settings" label turns all the parameters of the scanner back to default settings and switches it off.

Reset to factory settings

1.2. Baracoda advanced features

1.2.1. Switch on delay

In order to switch on the D-Fly in its standard mode, you should just press the trigger. You can set up the scanner to be switched on only after keeping the trigger pressed for two (2) seconds by reading the appropriate barcode.

Switch on delay : 2 seconds

Switch on delay : 0 second (*)

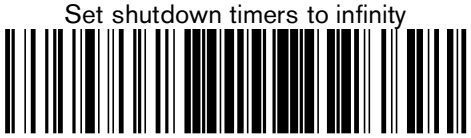
1.2.2. Shutdown timers

There are two different 'shutdown timers' :

- When connected timer : delay between the last scanned barcode and the switch off when the scanner is connected to a host
- Not connected timer : delay between the last scanned barcode and the switch off when the scanner is not connected to any host

It is possible to set those timers to 'infinite'. In this case, the scanner will stay all the time ON.

Set shutdown timers to infinity



By default, timers value are :
when connected timer = 20 minutes
Not connected timer = 10 minutes

Set shutdown timers to defaults

1.2.3. No data loss mode and Baracoda Header

Baracoda header:
It is a proprietary data encapsulation. It is necessary to activate it to use the Baracoda keyboard emulation (Kemul) and Terminal.
The Baracoda header is enabled in default settings

No data loss mode:
Baracoda has developed a proprietary communication protocol in order to enhance the security of the Bluetooth transmission.
Every barcode sent to the host must be acknowledged by the host (until then, the scanner will transmit it again and again).
This acknowledgment is disabled in default settings. It is strongly recommended to set this protocol acknowledgment on when using the scanner with the BaracodaManager.

Enable Baracoda header
+ “No Data loss mode” ON

Enable Baracoda header
+ “No Data loss mode” OFF (*)

Disable Baracoda header
+ “No data loss mode” OFF

1.3. Reading Mode

- In trigger mode, pressing the trigger will activate the beam.
- The Aiming trigger mode has been developed for users who need to scan barcodes very close one to another and they have to be sure to always read the correct one. Once in this mode, in order to read a barcode user will have to press the trigger twice. Pressing it the first time will switch on the beam but will not switch on the decoder (thus allowing user to aim at the correct barcode) while pressing the trigger the second time will activate the decoder thus allowing the D-Fly to actually decode the barcode.

Trigger (*)

Aiming Trigger Mode

1.4. Operating Mode

Real Time mode (standard mode): barcodes are transmitted in real time to the remote host device/terminal (with optional acknowledgment beep from the host to the scanner).
User can choose if the scanner, when not connected, should read, memorize and later automatically upload the barcodes or shouldn't read the barcodes (no beam).

Important reminder: if an ACK beep or buffer is needed, the scanner must be set in the "no data loss mode" first. (See part 1.3.3.)

1.4.1. Real Time mode

Erases all codes in memory and forces the D-Fly in Real time mode. No other setting is changed.

Enable

1.4.2. Real Time mode with "No data loss mode"

Forces the D-Fly in Real Time mode (with data acknowledgement). Erases all codes in memory. The D-Fly should have been previously set in the "No data loss mode" ON.

Enable

1.4.3. REAL TIME without "No data loss mode"

Forces the D-Fly in Real Time mode (without data acknowledgement). Erases all codes in memory.
The D-Fly should have been previously set in the "No data loss mode" ON.

Enable

1.5. Buzzer and Led Settings

You can use these options to enable or disable the buzzer and / or the Led.

LED ON (*)

LED OFF

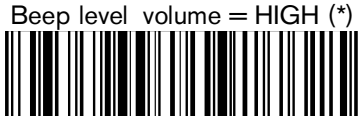
Good read beep on (*)

Good read beep off

ACK beep on (*)

ACK beep off

Beep level volume = HIGH (*)

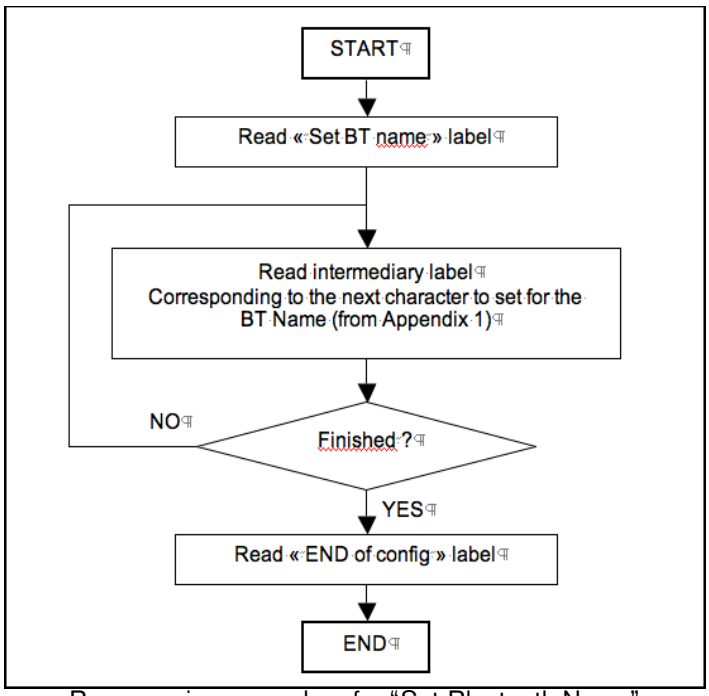


Beep level Volume = LOW

1.6. Bluetooth commands

1.6.1. Bluetooth name

You can change the scanner Bluetooth name; name that you see during a search of Bluetooth peripheral.



Programming procedure for "Set Bluetooth Name"

Set BT Name

End of config

1.6.2. Sniff period settings

Change the Sniff period. If the higher is the latency and the smaller is the power consumption.
Default value is 150ms.

Sniff period = 150ms (*)

Sniff period = 100ms

Sniff period = 200ms

Sniff period = 300ms

Sniff period = 500ms

1.6.3. Security (code PIN) settings

Some Bluetooth device will not accept connections with devices that do not have a security code.

Disable BT security code

Enable BT security code (*)

1.7. Prefix and suffix

The barcode string can be added a prefix and/or a suffix. The symbology prefix/suffix can be added by Baracoda Manager only.

These can come as described below:

General_Prefix	Symbology_Prefix	Barcode	Symbology_Prefix	General_Suffix

1.7.1. General Prefix

You can add a prefix (strings of more than 32 characters will not be accepted) to every barcode sent to the host device.
There is no prefix in default settings.

Enable

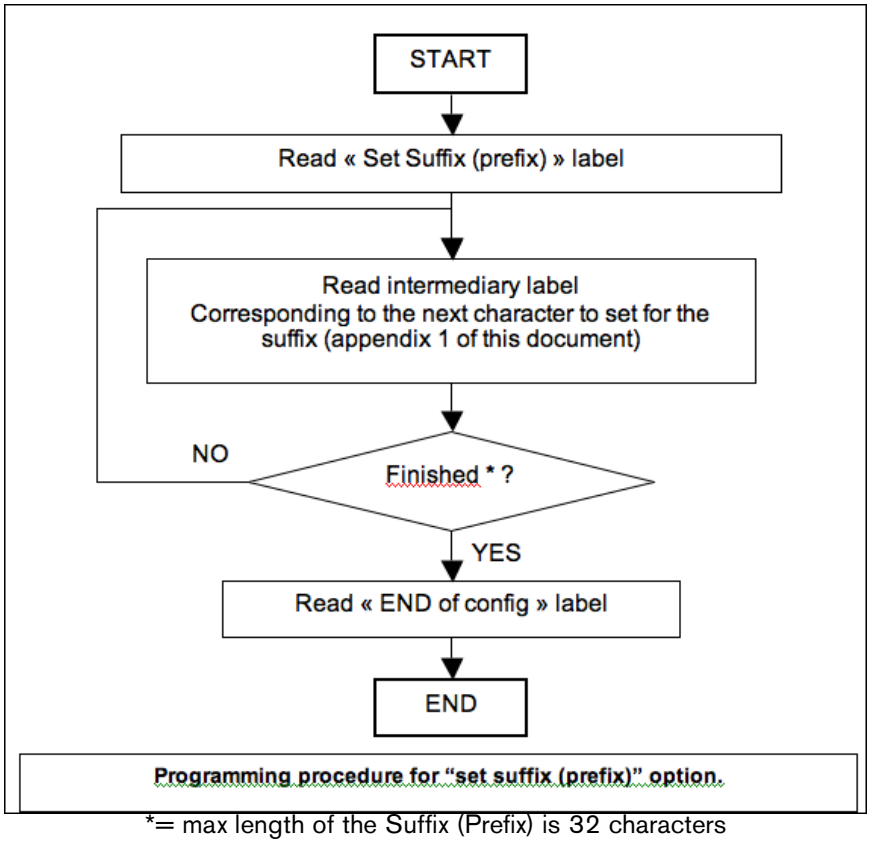
Disable (*)

1.7.2. General Suffix

You can add a suffix (strings of more than 32 characters will not be accepted) to every barcode sent to the host device.
There is no suffix in default settings.

Enable

Disable (*)



*= max length of the Suffix (Prefix) is 32 characters

Set prefix

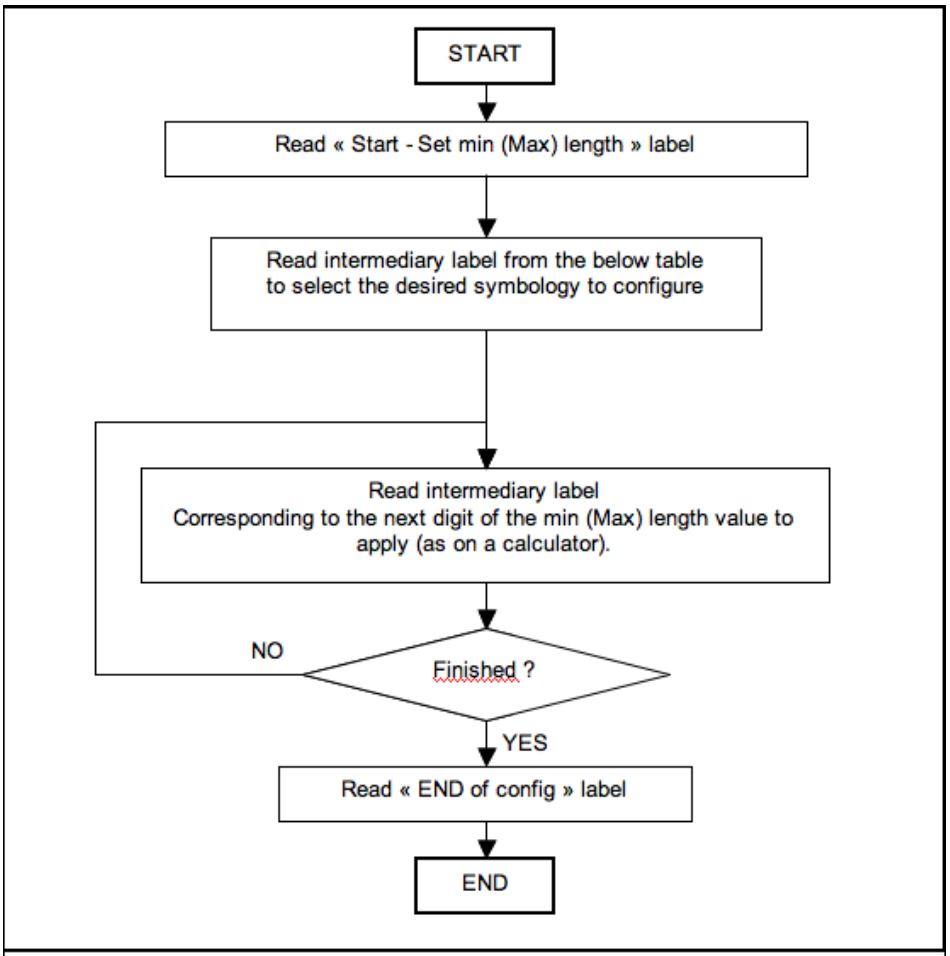
Set suffix

End of configuration

1.8. Set min or Max length option

1.8.1. Schema

The following is a procedure to follow for every barcode symbology.



Programming procedure for "set min (Max) length" option.

1.8.2. Symbology table

Header	Selected Symbology	Header	Selected Symbology
	SELECT ALL		Interleaved 2 of 5
	Code 93		Standard 2 of 5 (industrial 2 of 5)
	Code 128 / EAN 128		Code 11
	Code 39		MSI
	Codabar		

Start – set min length

Start – Set Max length

End of config

1.9. Symbology Identifier

AIM Identifier will be transmitted at the beginning of the barcode. More information about the AIM Identifier available in Appendix2

Symbology identifier - AIM - not transmitted (*)

Symbology identifier - AIM - transmitted

1.10. Voting

Standard voting set is two (2). This means that a barcode is considered read by the decoder if the same data is decoded twice. Changing this parameters will enable a stronger security on the decoding of the barcode.

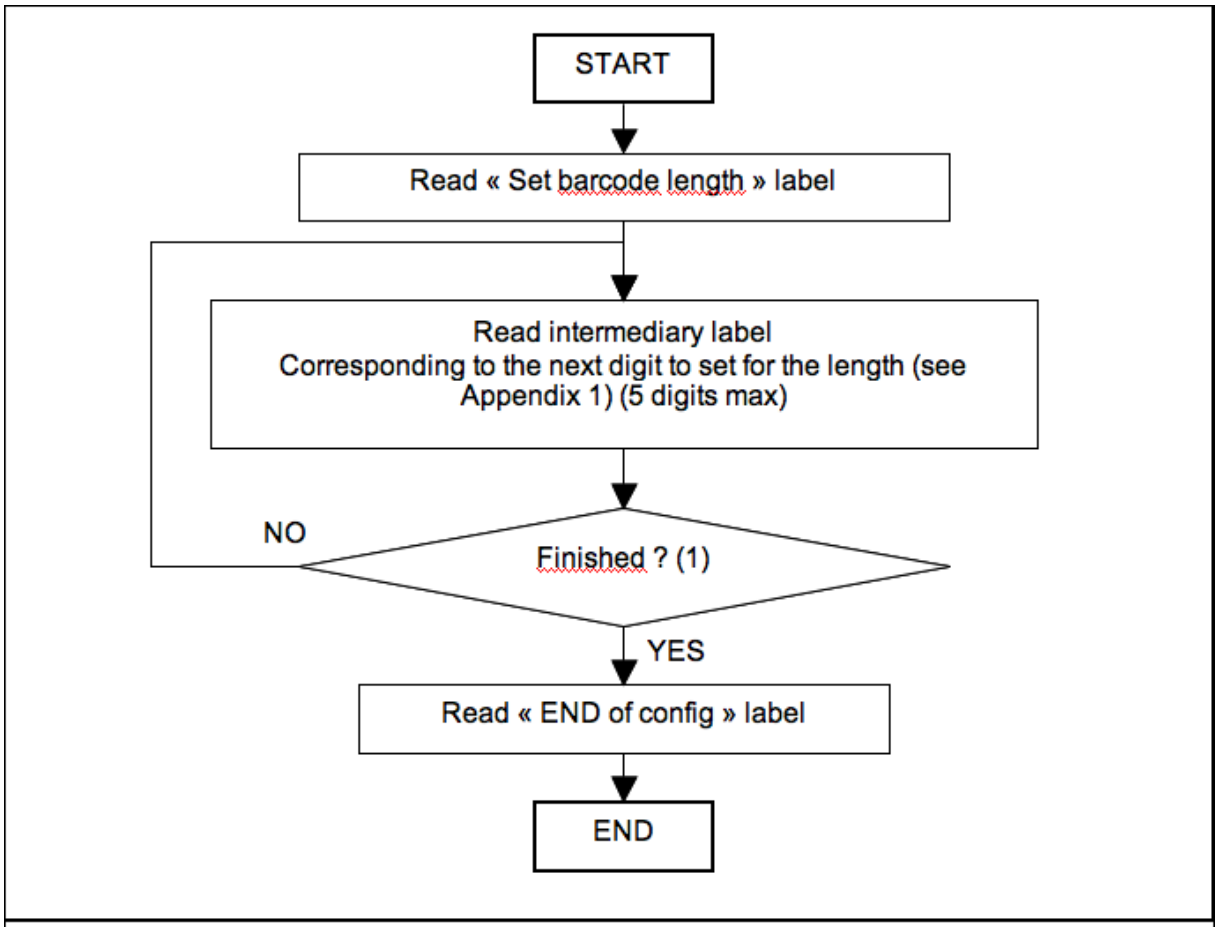
Voting = 2 (*)

Voting = 3

Voting = 4

1.11. Set decoder barcode length

You can set a fixed length for the barcode decoding. The scanner will only decode barcodes of this length.



Programming procedure for "set barcode length" option.

Set barcode length

END of config

2. Symbology Parameters

2.1. Symbology default settings

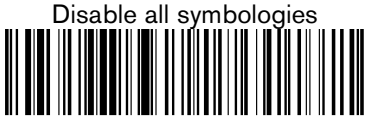
Sets the defaults decoder settings for all the symbologies

Set Decoder Default Settings

2.2. Enable/Disable All Symbolgy

Even if all symbologies are disabled, the D-Fly will always be able to read the programming barcodes of this document.

Disable all symbologies



Enable all symbologies (*)

3. Codabar

3.1. Enable/Disable Codabar

To enable or disable Codabar, scan the appropriate barcode below

Disable

Enable (*)

3.2. Codabar Start/Stop characters

Not transmitted (*)

Transmitted

3.3. Codabar Check Digit Verification (AIM recommendation)

Not used (*)

Checked and transmitted

Checked but not transmitted

3.4. Set Lengths for Codabar

Any length

Barcode length Min=6 (*)

4. Code 11 Settings

4.1. Enable/Disable Code 11

To enable or disable Code 11, scan the appropriate barcode below.

Code 11 - not active (*)

Code 11 - active

4.2. Code 11 check digit(s) verification

1 digit (*)

2 digits

4.3. Transmit Code 11 check digit(s)

This feature selects whether or not to transmit the Code 11 check digit(s).

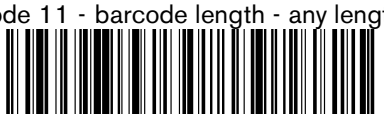
Check and transmitted (Enable) (*)

Check but not transmitted (Disable)

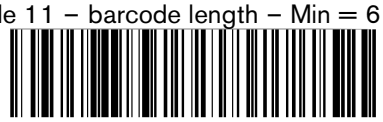
4.4. Set Length for Code 11

This features check the length of the barcode

Code 11 - barcode length - any length



Code 11 – barcode length – Min = 6 (*)



5. Code 39 settings

5.1. Enable/Disable Code 39

To enable or disable Code 39, scan the appropriate barcode below

Enable (*)

Disable

5.2. Enable/Disable Code 39 Full ASCII

Code 39 - format - standard 43 characters (*)

Code 39 - format - full ASCII

5.3. Enable/Disable Code 39 Start/stop

Code 39 - start/stop - not transmitted (*)

Code 39 - start/stop - transmitted

5.4. Accepted Code 39 characters

Code 39 - start/stop - accepted characters - * only (standard Code 39) (*)

Code 39 - start/stop - accepted characters - $ only (Trioptic Code 39)

Code 39 - start/stop - accepted characters - $ and * (standard and Trioptic Code 39)

5.5. Code 39 Check Digit Verification

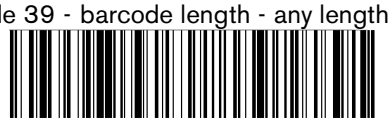
Code 39 - check digit - not used (*)

Code 39 - check digit - modulo 43 - checked and transmitted

Code 39 - check digit - modulo 43 - checked but not transmitted

5.6. Set lengths for Code 39

Code 39 - barcode length - any length (*)



Code 39 - barcode length - minimum length = 6

6. 3.9/ Code 93 Settings

6.1. Enable/Disable Code 93

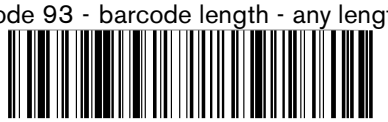
To enable or disable Code 93, scan the appropriate barcode below

Code 93 - not active

Code 93 – active (*)

6.2. Set Lengths for Code 93

Code 93 - barcode length - any length



Code 93 - barcode length - minimum length = 6 (*)

7. Code 128 Settings

7.1. Enable/Disable Code 128/EAN 128

To enable or disable Code 128/EAN 128, scan the appropriate barcode below

Disable

Enable (*)

7.2. Set lengts dor Code 128/EAN 128

Code 128/EAN 128 - barcode length - any length (*)

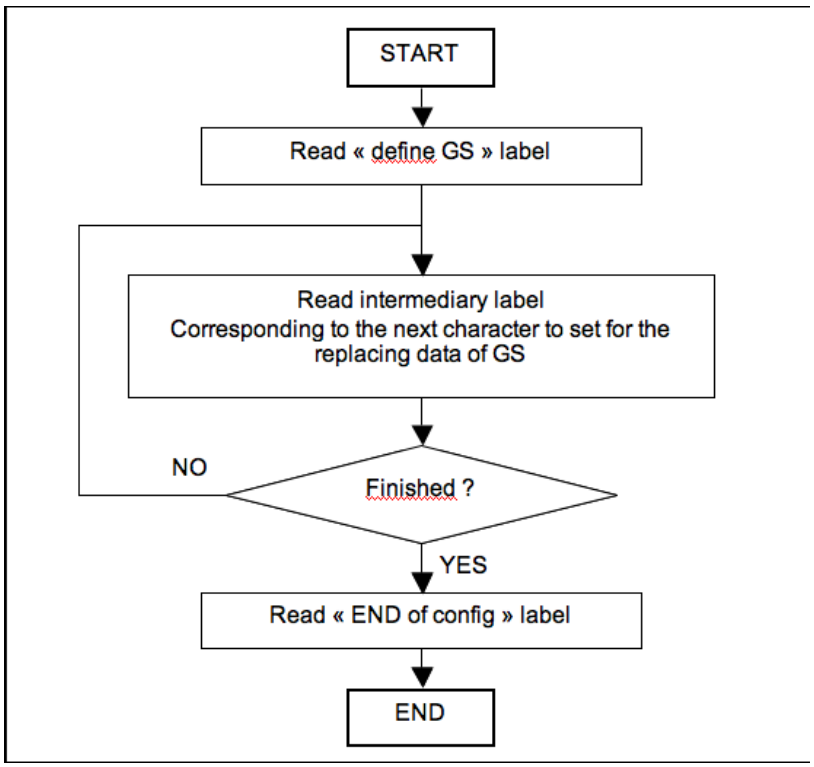
Code 128/EAN 128 - barcode length - minimum length = 6

7.3. EAN 128: Group Separator

'FNC1' included in an EAN128 code is transmitted by default as 'GS' (Group Separator – 0x1D).

Enable GS transmission (*)

Disable GS Transmission



Define GS

End of configuration

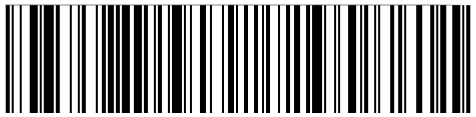
The common request to replace 'GS' by the | (pipe) can be done through the scan of :

Define | as GS

Even if the "AIM ID transmit" is disabled, it is possible to enable the AIM ID transmission for EAN128.

7.4. Enable/Disable AIM ID Transmission

Enable AIM ID transmission for EAN128



Disable AIM ID transmission for EAN128 (*)

8. Interleaved 2 of 5 Settings

8.1. Enable/Disable Interleaved 2 of 5

To enable or disable Interleaved 2 of 5, scan the appropriate barcode below

Interleaved 2 of 5 - not active

Interleaved 2 of 5 – active (*)

8.2. Interleaved 2of 5 Check Digit Verification and Transmit

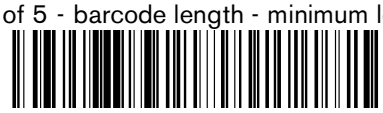
Interleaved 2 of 5 - check digit - not used (*)

Interleaved 2 of 5 - check digit - mod 10 - checked and transmitted

Interleaved 2 of 5 - check digit - mod 10 - checked but not transmitted

8.3. Set lengths for Interleaved 2 of 5

Interleaved 2 of 5 - barcode length - minimum length = 6 (*)



Interleaved 2 of 5 – barcode length- any length

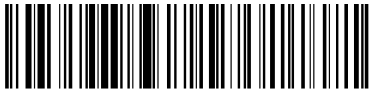
9. MSI Code Settings

9.1. Enable/Disable MSI

To enable or disable MSI code, scan the appropriate barcode below

MSI Code - not active (*)

MSI Code – active



9.2. MSI Check Digit Verification and Transmit

MSI Code - check digit - mod 10 - checked and transmitted (*)

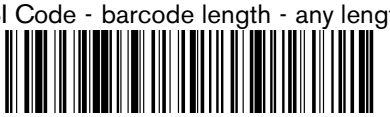
MSI Code - check digit - mod 10 - checked but not transmitted

MSI Code - check digit - double mod 10 - checked and transmitted

MSI Code - check digit - double mod 10 - checked but not transmitted

9.3. Set lengths for MSI

MSI Code - barcode length - any length



MSI Code - barcode length - minimum length = 6 (*)

10. Standard 2 of 5 Settings

10.1. Enable/Disable Standard 2 of 5

To enable or disable Standard 2 of 5 code, scan the appropriate barcode below

Standard 2 of 5 - not active

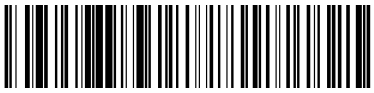
Standard 2 of 5 – active *

10.2. Standard 2 of 5 Check Digit Verification and Transmit

Standard 2 of 5 - check digit mod 10 - not used (*)

Standard 2 of 5 - check digit mod 10 - checked and transmitted

Standard 2 of 5 - check digit mod 10 - checked but not transmitted



10.3. Set lengths for Standard 2 of 5

Standard 2 of 5 - barcode length - any length

Standard 2 of 5 - barcode length - minimum length = 6 (*)

11. UPC/ EAN Settings

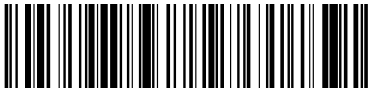
11.1. Enable/Disable UPC/EAN

UPC / EAN - active (*)

UPC / EAN - not active

UPC / EAN - UPC-A and EAN 13 desactivated

UPC / EAN - UPC-E desactivated



UPC / EAN - EAN-8 desactivated

11.2. Transmit EAN13 Check Digit

UPC / EAN - check digit - UPC-A and EAN13 - transmitted (*)

Enable EAN13/UPCA checksum transmission

UPC / EAN - check digit - UPC-A/EAN 13 - not transmitted

11.3. Transmit UPC-E Check Digit

UPC / EAN - check digit - UPC-E - transmitted (*)

UPC / EAN - check digit - UPC-E - not transmitted

11.4. Transmit EAN 8 Check Digit

UPC / EAN - check digit - EAN-8 - transmitted (*)

UPC / EAN - check digit - EAN-8 - not transmitted

11.5. Transmit UPC-A Check Digit

UPC / EAN - UPC number system - UPC-A - transmitted (*)

UPC / EAN - UPC number system - UPC-A - not transmitted

11.6. Transmit UPC number system for UPC-E

UPC / EAN - UPC number system - UPC-E - transmitted (*)

UPC / EAN - UPC number system - UPC-E - not transmitted

11.7. UPC-A, UPC-E, EAN conversions

UPC / EAN - re-encoding UPC-A, UPC-E, EAN-8 - UPC-A transmitted as EAN-13

UPC / EAN - re-encoding UPC-A, UPC-E, EAN-8 - UPC-A transmitted as UPC-A (*)

UPC / EAN - re-encoding UPC-A, UPC-E, EAN-8 - UPC-E transmitted as UPC-E (*)

UPC / EAN - re-encoding UPC-A, UPC-E, EAN-8 - UPC-E transmitted as UPC-A

UPC / EAN - re-encoding UPC-A, UPC-E, EAN-8 - EAN-8 transmitted as EAN 8 (*)

UPC / EAN - re-encoding UPC-A, UPC-E, EAN-8 - EAN-8 transmitted as EAN-13

APPENDIX 1: ASCII Table (A-Z, a-z, 0-9, ponctuation, Control characters)

Capital letters (A-Z) :

Name	Programming label	Name	Programming label
A		N	
B		O	
C		P	
D		Q	
E		R	
F		S	
G		T	
H		U	
I		V	
J		W	
K		X	
L		Y	
M		Z	

Small letters (a-z) :

Name	Programming label	Name	Programming label
a		n	
b		o	
c		p	
d		q	
e		r	
f		s	
g		t	
h		u	
i		v	
j		w	
k		x	
l		Y	
m		z	

Ponctuation

Name	Programming label	Name	Programming label
Space		<	
!		=	
"		>	
#		?	
$		@	
%		[	
&		]	
'		^	
(		_	
)		{	
*		|	
+		}	
,		~	
-		:	
.		;	
/			

Decimal numbers (0-9) :

Name	Programming label
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

Control Characters:

Name	Programming label
CR	
EOT	
ETX	
LF	
NUL	
SOH	
STX	
TAB	

APPENDIX 2

The SI prefix is a two (2) or three (3) character string:
] c m where
] : SI indicator
c : Symbology Identification
m : Modifier characters (optional)

Symbology Character	
A	Code 39
B	Telepen
C	Code 128
D	Code One
E	EAN/UPC
F	Codabar
G	Code 93
H	Code 11
I	ITF 25
K	Code 16K
L	PDF417
M	MSI code
N	Anker Code
O	Codablock
P	Plessey Code
R	Straight 2 of 5 (two bar start/stop codes)
S	Straight 2 of 5 (three bar start/stop codes)
T	Code 49
X	Other Bar code
Z	Non Barcode data

Modifier Characters
The modifier character is determined by summing the option values of each symbology. If the sum is greater than 9, use A, B, C, D, E , F in the place of 10, 11, 12, 13, 14 and 15.

Code 39 Option Values
0 No check character or Full ASCII
1 Reader has performed mod 43 check
2 Reader has performed mod 43 check and stripped the check character
4 Reader has performed Full ASCII conversion

Telepen Option Values
0 Full ASCII mode
1 Double density numeric mode
2 Double density numeric followed by full ASCII
4 Full ASCII followed by double density numeric

Code 128 Option Values
0 Standard
1 Function code 1 in first character position
2 Function code 2 in second character position
4 Concatenation according to ISBT specification has been performed, and concatenated data follows.