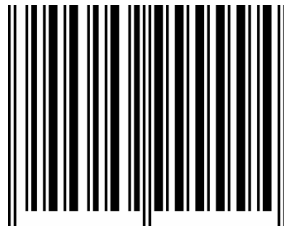


Omnidirectional Barcode Scanner User's Manual

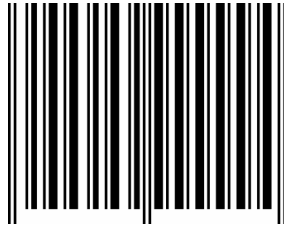
Enter/Exit Programming Mode



(This barcode is also found at the cover page)

★=Default Value

Enter/Exit Programming Mode



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INTRODUCTION

This is an advanced programming guide for omnidirectional laser barcode scanner. This guide contains serial of programming barcode labels, and by scanning these codes, it can make configurations of the scanner. This allows decoding options and interface protocols to be tailored to a specific application. The configuration is stored in non-volatile memory and will not be lost by removing power from the scanner, other than specified in this guide for any special functions or specification, please contact your dealer for detail.

The scanner must be properly powered before programming. For RS-232C type scanners, an external power adapter must be used to supply DC power to the scanner. If a keyboard emulation type scanner is used with an IBM PC/XT/AT, PS/2 or any fully compatible computer, power will be drawn from the keyboard port, therefore no external power adapter is required. If keyboard emulation type scanner is used with any other non IBM PC compatible computer, an external power may be required.

Under the programming mode, the scanner will acknowledge a good and valid reading with 3 short beep. It will give long beeps for either an invalid or bad reading.

CHANGE THE SCANNER SETTING

In order to change the scanner setting, please follow the steps below:

1. Scan the “Enter/Programming Mode” label. There will be beeps (low-high) indicating ready to make setting.
2. Scan the “Enter/Programming Mode” label again to save the configuration. There will be 2 beeps (long-short) indicating a successful setting.

After reading a valid barcode in programming mode, the scanner will give a high beep.

DEFAULT PARAMETERS

This table gives the default settings of all the programmable parameters. The default settings will be restored whenever the “Reset” programming label is scanned.



Reset (Return to factory default)

Default Values of Operating Parameters

| Function | Default |
|-------------------------|------------------|
| Sleep mode | |
| Motor sleep mode | After 30 minutes |
| Laser sleep mode | After 10 minutes |
| Scanner timing | |
| Same code delay | 300 msec |
| Beeper tone | |
| Frequency | medium |
| Duration | 100 msec |
| Code identifiers | |
| Code ID | off |
| Code 39 | M |
| ITF 2 of 5 | I |
| Chinese post code | H |
| UPC-A | A |
| UPC-E | E |
| EAN-13 | F |
| EAN-8 | FF |
| Codabar | N |
| Code 128 | K |
| Code 93 | L |
| MSI/Plessey | P |
| RSS-14 standard | RS |
| RSS-limited | RL |
| RSS-expanded | RX |

Default Values of Keyboard Emulation Parameters

| Function | Default |
|-------------------------|-----------------------|
| Keyboard type selection | IBM PC/AT USA |
| Laser sleep mode | Enter/carriage return |

Default Values of Serial Communication Parameters

| Function | Default |
|-------------------------------|---------|
| Handshaking protocol | None |
| ACK/NAK response time setting | 300msec |
| Baud rate | 9600 |
| Data bit | 8 |
| Stop bit | 1 |
| Parity | None |
| Message terminator selection | CR/LF |

Default Values of USB Emulation Parameters

| Function | Default |
|-------------------------|-------------|
| Keyboard type selection | US keyboard |
| Message terminator | Enter |

Default Values of Wand Emulation Parameters

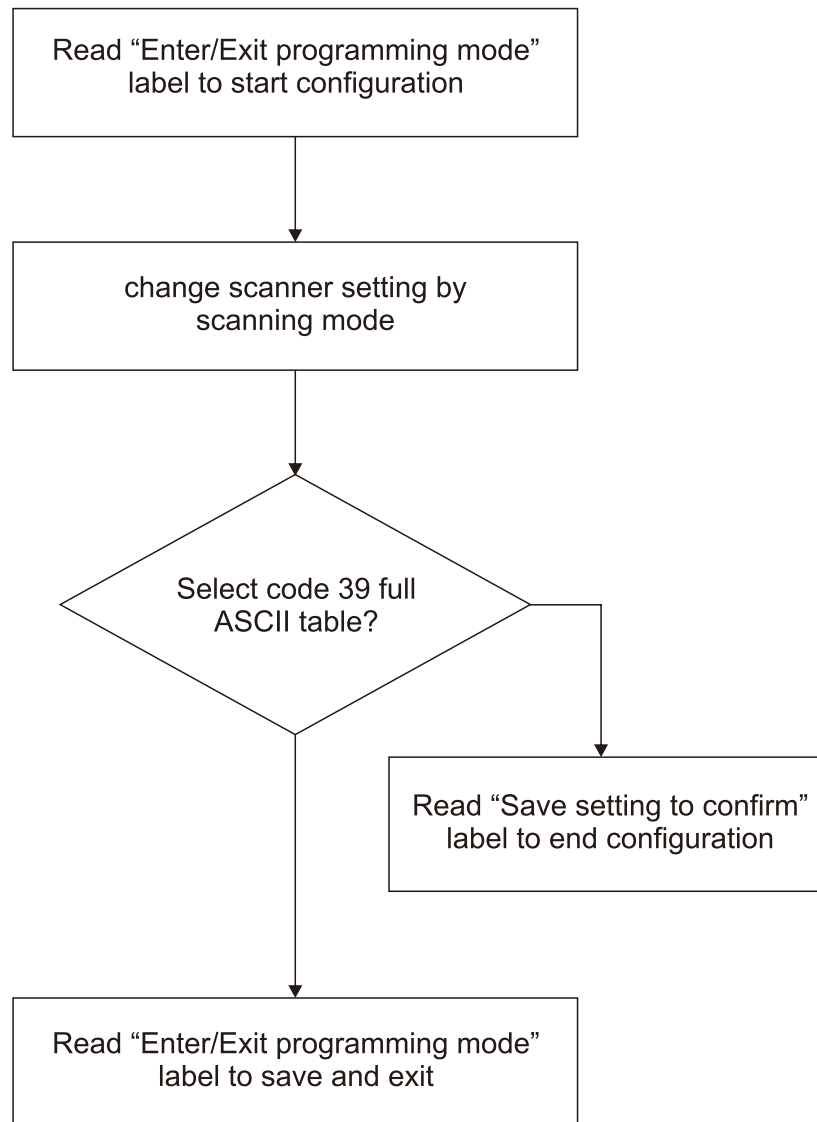
| Function | Default |
|-----------------------|------------------|
| Wand emulation speed | Normal |
| Wand emulation output | Back=high |
| Data output format | Transmit as scan |

Default Values of Decoding Parameters

| Function | Code | Default Value |
|-------------------------|-----------------------|-----------------|
| Reading codes selection | Code 39 | Enable |
| | ITF 2 of 5 | Disable |
| | Chinese Post Code | Disable |
| | UPC/EAN/JAN | Enable |
| | Codabar | Disable |
| | MSI/Plessey | Disable |
| | Code 128 | Enable |
| | Code 93 | Disable |
| | EAN-128 | Disable |
| | Italy Pharmacy | Disable |
| | ISSN/ISBN | Disable |
| | RSS(GS1) | Disable |
| Code 39 | Codes | Standard |
| | Start/Stop characters | No transmitting |
| | Check digit | Disable |
| | Concatenation | Off |
| | Length | 3-32 |
| Interleave 2 of 5 | Length | 6-32 |
| | Check digit | Disable |
| Chinese Post Code | Length | 10-32 |
| | Check digit | Disable |
| Codabar | Type | Standard |
| | Start/Stop characters | A, B, C, D |
| | Length | 6-32 |
| Code 128 | FNC2 append | Disable |
| | Check digit | Disable |

| Function | Code | Default Value |
|----------------|--|------------------|
| UPC/EAN/JAN | Format | All |
| | Addendum | Disable |
| | UPC-E=UPC-A | Disable |
| | UPC-A leading digit | Transmit |
| | UPC-A check digit | Transmit |
| | UPC-E leading digit | Transmit |
| | UPC-E check digit | Transmit |
| Code 93 | Length | 3-32 |
| | Check digit | Not transmit |
| MSI | Length | 6-32 |
| | Check digit | Transmit |
| Italy Pharmacy | Transmit "A" character | Not transmitting |
| RSS-14 | RSS-14 Standard | Disable |
| | RSS-14 limited | Disable |
| | RSS-14 expanded | Disable |
| | Transmit RSS-14 check digit | Enable |
| | Transmit RSS-14 application ID(01) | Enable |
| | Transmit RSS-14 limited check digit | Enable |
| | RSS-14/EAN-128 emulation | Disable |
| | Transmit RSS-14 limited application ID(01) | Enable |
| | Transmit RSS-14 expanded check digit | Enable |
| | Transmit AI(01) of expanded | Enable |
| | RSS-14 expanded/EAN-128 emulation | Disable |

PROGRAM PROCEDURE USING MENUS



SYSTEM SETTING

The series scanner is a multi-interface communication scanner. If you had ordered only one type of interface, the device is configured in the interface requested, i.e. RS-232C, keyboard, wand emulation or USB, if not requested, the default interface is set in keyboard wedge interface (PC/AT). Use this section to change interface.

Reset (Return to Factory Default)

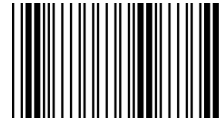
Reading of the “Reset” barcode label turns all parameters back to default values, and the scanner remains in the last interface set when it is reset.



Reset (Return to factory default)

Abort (Exit Programming Mode)

Reading of the “Abort” barcode label discards all the parameter read prior to scan the “Enter/Exit Programming Mode”.



Abort (Exit programming Mode)

Return to PC/AT Default

This barcode allows setting in keyboard wedge interface for IBM PC AT/PS/2 and compatibles.



Return to PC/AT default

Return to RS-232 Default

The RS-232C interface scanner is often used when connecting to the serial port of a PC or terminal. Read the barcode to set the scanner into RS-232 interface



Return to RS-232 default

Return to USB Default

Reading of “Return to USB default” sets the device into USB interface support.



Return to USB default

Return to Wand Emulation Default

The wand emulation is achieved by decoding a scanned barcode and then encoding it again, so that the output is reading decode by an external decoder designed for processing of wand data.



Return to wand emulation default

Return as Customer Default

Reading of the label sets the device back to customer saved parameters settings.



Return as customer default

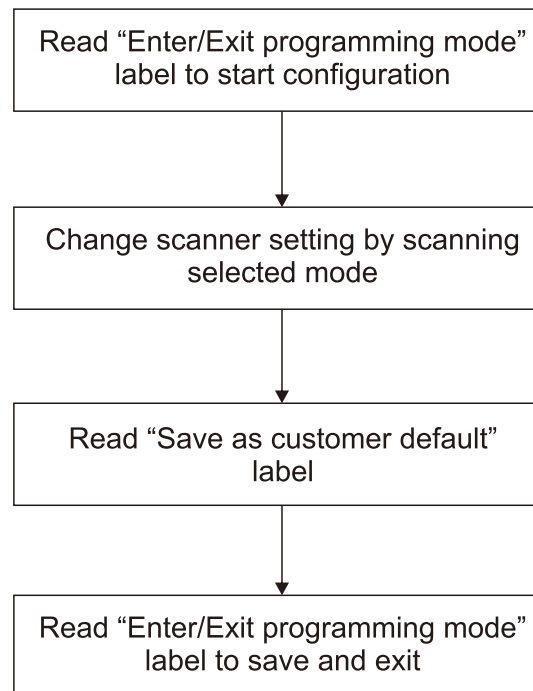
Save as Customer Default

Reading of this label to save the desired parameters set into customer's own default setting.



Save as customer default

How to Save as Customer Default



SLEEP TIME SELECTION

In this section, user can set both laser and/or motor to either into sleep mode. The timeout programming labels will allow users to set the different time frame before entering into laser and/or motor sleep mode. The feature reduces power consumption and prolongs scanner life time.

NOTE: Laser always enters sleep mode before motor. If the motor timeout is set shorter than the laser time, then laser would enter sleep mode as motor enters sleep mode.



Motor sleep mode off



Motor sleep time 5 min



Motor sleep time 10 min



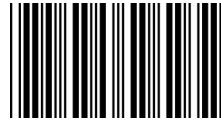
Motor sleep time 20 min



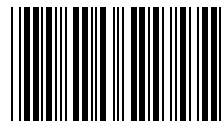
★Motor sleep time 30 min



Motor sleep time 60 min



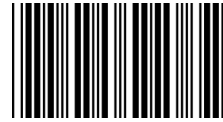
Laser sleep mode off



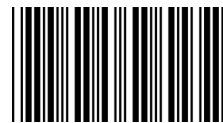
Laser sleep time 5 min



★Laser sleep time 10 min



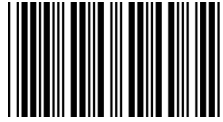
Laser sleep time 15 min



Laser sleep time 20 min



Laser sleep time 25 min



Laser sleep time 30 min

SAME CODE DELAY TIME

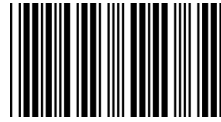
This parameter sets the minimum time allow between decodes of the same label.



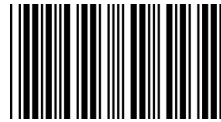
Same code delay time 50 msec



Same code delay time 100 msec



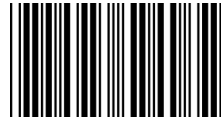
Same code delay time 200 msec



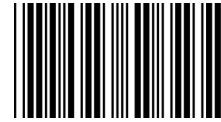
★ Same code delay time 300 msec



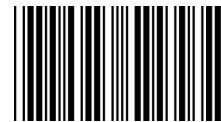
Same code delay time 400 msec



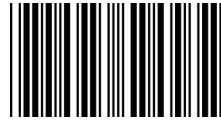
Same code delay time 500 msec



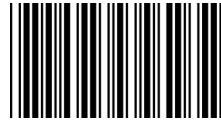
Same code delay time 600 msec



Same code delay time 700 msec



Same code delay time 800 msec



Same code delay time 900 msec



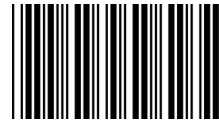
Same code delay time 1000 msec



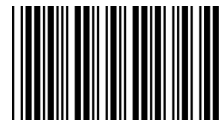
Same code delay time infinite

BEEPER SOUND SELECTION

This section includes all setting labels for beeper sound setting, including tone frequency, volume, duration time, power on beep enable/disable sound when the scanner enters sleep mode.



Led/Beep after transmission



★Led/Beep before transmission



★Power up tone enable



Power up tone disable

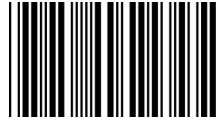


Sleep sound

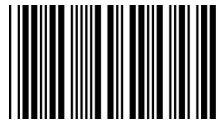


★Sleep silent

Beeper Tone



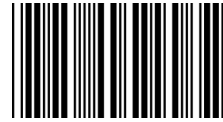
★Medium beeper tone



Low beeper tone



High beeper tone

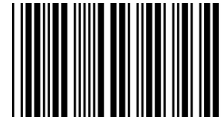


Speaker disable

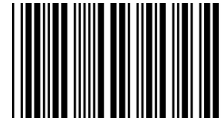
Beeper Sound Duration



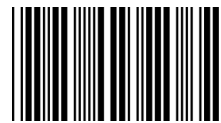
★Beeper sound duration (100msec)



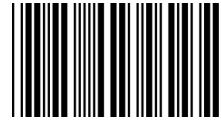
Beeper sound duration (50msec)



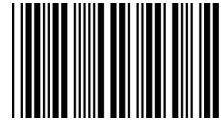
Beeper sound duration (20msec)



Beeper sound duration (5msec)

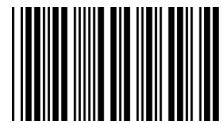


Beeper sound duration (200msec)



Beeper sound duration (500msec)

Beeper Volume



★Loud beeper volume



Medium beeper volume



Low beeper volume

BARCODE IDENTIFIER CODE SETTING

The scanner can transmit maximum 2 digits barcode identifier code for different types of barcode. Use enable or disable identifier setting barcode.

The procedure is as follows:

1. Scan "Enter/Exit Programming Mode".
2. Scan "Barcode identifier setting code".
3. Scan the new code mark from the ASCII table (maximum 2 digits). For example, if AB is the code mark, then scan A and B.
4. Scan "Saving setting to confirm" label.
5. Scan "Enter/Exit Programming Mode".

Barcode Identifier Code Selection

Scan “Enable identifier code” label to transmit the label ID as shown in the table below:

| | |
|-------------------|----|
| Code 39 | M |
| ITF 2 of 5 | I |
| Chinese post code | H |
| UPC-A | A |
| UPC-E | E |
| EAN-13 | F |
| EAN-8 | FF |
| Codabar | N |
| Code 128 | K |
| Code 93 | L |
| MSI/Plessey | P |
| RSS-14 standard | RS |
| RSS-14 limit | RL |
| RSS-14 expanded | RX |



Enable identifier code



Enable identifier code table as AIM standard

Barcode Identifier Code Setting



Code 39 identifier code setting



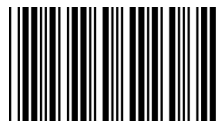
ITF 2 of 5 identifier code setting



Chinese post code identifier code setting



UPC-E identifier code setting



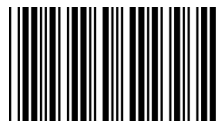
UPC-A identifier code setting



EAN-13 identifier code setting



EAN-8 identifier code setting



Cadabar identifier code setting



Code 128 identifier code setting



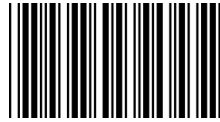
Code 93 identifier code setting



MSI identifier code setting



Save setting to confirm



RSS-14 identifier code setting



RSS-14 limit identifier code setting



RSS-14 expanded identifier code setting

MESSAGE DELAY

This section contains different delay time frames between two consecutive message. This delay will be added before each data transmission.



★ Inter message delay 0 ms



Inter message delay 100 ms



Inter message delay 500 ms



Inter message delay 1000 ms

CHARACTER DELAY

This option governs delay time between two consecutive characters, the delay time can be altered by scanning the following labels.



★ Inter character delay 0 ms



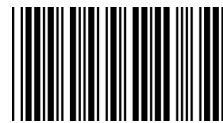
Inter character delay 2 ms



Inter character delay 5 ms



Inter character delay 10 ms



Inter character delay 20 ms



Inter character delay 50 ms

INTERFACE COMMUNICATION SETTING

This section contains labels to configure the scanner to user's host terminal. The following interface are supported:

*Keyboard interface

*RS-232C interface

*USB interface

*Wand interface

RS-232C Interface Configuration

Baud rate



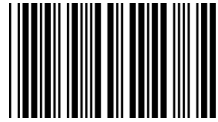
38400



19200



★9600



4800



2400



1200



57600



115200

Data Bit Setting



7 data bit



★8 data bit

Stop Bit Setting



★1 stop bit



2 stop bit

Parity Bit Setting



Even parity



Odd parity



Mark parity



Space parity



★ None parity

Hand Shaking Protocol

The RS-232C type scanner support four handshaking protocol. With these options of communication protocol, users can tailor the scanner to meet the requirement of most system. These handshaking protocol are:

None:

The scanner will transmit any read data unconditionally. The scanner will not check the receiving device or the transmitted message.

RTS/CTS:

Under this handshaking protocol, the scanner use the RTS pin to instruct the connected device to transmit data and test the CTS pin for readiness of the connected device to receive data.

ACK/NAK:

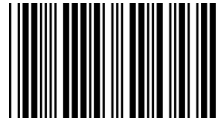
The scanner waits for an ACK or NAK signal from the host computer after each data transmission. Normally, the scanner will temporarily stored data in the memory buffer before receiving the ACK or NAK signal. If the ACK signal is received, it will clear the transmitted data and continue to send the next data. In case the NAK signal is received, it will repeat to transmit the same data until receiving the ACK signal.

Xon/Xoff:

During the data communication, if a scanner receives an Xoff (ASCII 013H), it will stop the transmission at once. The scanner waits for a Xon (ASCII 01H) to start the transmission again.



★None handshaking



ACK/NAK



Xon/Xoff



RTS/CTS

ACK/NAK Response Time Setting



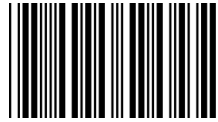
★ACK/NAK response time 300ms



ACK/NAK response time 500ms



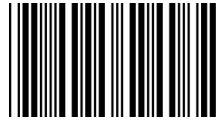
ACK/NAK response time 1s



ACK/NAK response time 2s



ACK/NAK response time 3s



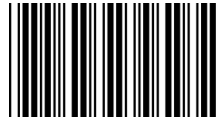
ACK/NAK response time 5s



ACK/NAK response time infinity



★Disable ACK/NAK timeout beeper



Enable ACK/NAK timeout beeper



Enable beeper on <BEL> character



★ Ignore beeper on <BEL> character

Message Terminator for RS-232

The series RS-232C type scanner can be programmed to append a terminator to every message sent via the serial port. Different terminator will be appended at the end of message sent from the serial port.



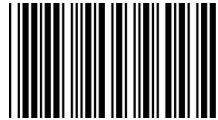
RS-232 message terminator---none



★RS-232 message terminator---CR/LF



RS-232 message terminator---CR



RS-232 message terminator---LF



RS-232 message terminator---H tab



RS-232 message terminator---STX/ETX



RS-232 message terminator---EOT

USB HID & Keyboard Wedge Interface Configuration

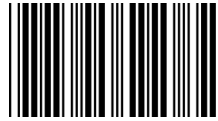
Message Terminator for Keyboard Wedge



Keyboard terminator---none

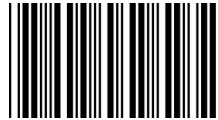


★Keyboard terminator---Enter



Keyboard terminator---H tab

Keyboard Language Selection



Enable international keyboard type
(Alt method)



★Keyboard language support---USA



Keyboard language support---Germany



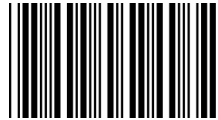
Keyboard language support---UK



Keyboard language support---French



Keyboard language support---Spanish



Keyboard language support---Italy



Keyboard language support---Swiss



Keyboard language support---Swedish



Keyboard language support---Japanese



Keyboard language support---Belgium



Keyboard language support---Turkish

Capital Lock

Select the suitable code to math your keyboard caps status.



★Reset



Shift



Capital lock on

Function Key Emulation

In this section, user can emulate function keys. Arrow keys, and many other extended keys. An IBM compatible keyboard does not translate to ASCII characters; it can be concatenated with input data as header and/or trailer.



Function key emulation enable



★Function key emulation disable

Wand Emulation Configuration

Emulation Speed Selection

The data output speed can be set to benefit the external decoder.



Wand emulation speed=Low
(1ms narrow element width)



★Wand emulation speed=Medium
(600us narrow element width)



Wand emulation speed=High
(300us narrow element width)



Wand emulation speed=Higher
(100us narrow element width)

Emulation Data Output Selection

The decoded data output logic level can be set to befit the external decoder.



★Wand emulation data output black=high



Wand emulation data output black=low



★Wand data transmitted as scanning



Enable wand output data format as code 39

Emulation Data Idle Selection

The level refers to wand emulation data signal with not in use.



★Idle=high



Idle=low

DATA EDIT

Prefix and Suffix

The prefix and suffix section allows you to append a Prefix and/or Suffix to every message transmitted via the serial port, USB or the keyboard port. There is no restriction in selecting Prefix or Suffix characters as far as the sum of the lengths of Prefix and Suffix is not greater than 10 digits.

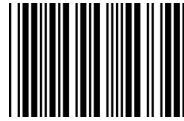
1. Selection either Prefix or Suffix you are going to program by scanning the corresponding label.
2. Scan the characters you want from the ASCII table to set as header or trailer. (Be sure to enable full ASCII code 39 option before you start)
3. Read the "Save setting to confirm" label to confirm you choice into memory.



Prefix



Suffix

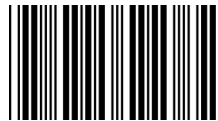


Save setting to confirm

Truncate Header/Trailer Character

This setting allows you to truncate a number of header or trailer for symbology. As a result, the specific character you select is deleted from the symbology you want.

1. Scan the “Enter/Exit programming mode” label.
2. Select the “Truncate header /truncate trailer” label.
3. Scan two barcode values from the full ASCII code table(0-9). For example, scan 0 and 2 if you want to clear the number 2 from header.
4. Scan “Saving setting to confirm” label.
5. Scan “Enter /Exit programming mode” label to end of configuration.



Truncate header character



Truncate trailer character

Add Code Length

This option allows you to add the reading barcode numeric characters as header.



Add code length as header enable (all barcode)



★Add code length as header disable (all barcode)

SYMBOLGY CONFIGURATION

In this section, device can be programmed to recognize one or more barcode symbologies automatically. If the scanner is configured to support multiple barcode symbologies, the scanner will discriminate different symbologies automatically. However, to improve scanning performance, you should enable only the symbologies that will be in active use.

Reading Code Selection



★ Code 39 enable



Code 39 disable



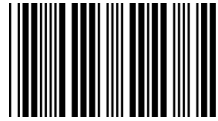
Codabar enable



★Codabar disable



★UPC/EAN/JAN enable



UPC/EAN/JAN disable
(only can't transmitted but can decode)



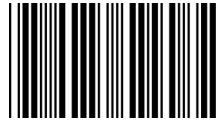
ITF 2 of 5 enable



★ITF 2 of 5 disable



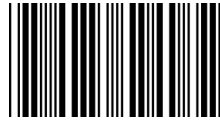
Chinese post code enable



★Chinses post code disable



★Code 128 enable



Code 128 disable



Code 93 enable



★Code 93 disable



EAN-128 enable



★EAN-128 disable



EAN convert to ISSN/ISBN



★EAN convert to ISSN/ISBN disable



Code 32 enable



★Code 32 disable



MSI enable



★MSI disable

UPC/EAN Parameters Setting

In this section, device can be programmed to recognize some or all derivatives of UPC/EAN.

These derivatives are UPC-E, UPC-A, EAN-8, EAN-13, Either 2 or 5 addendum digits is supported, addendum digits are those additional digits after normal stop character.

The programming menu for UPC/EAN/JAN also provides several options to govern the transmission of scanned data.

- *UPC/EAN expansion
- *Check digit transmission
- *Data redundant check
- *Addendum seek timeout
- *Addendum left/right margin adjust

Format



★UPC/EAN/JAN enable



EAN-8 or EAN-13 enable



UPC-A and EAN-13 enable



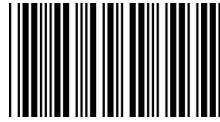
UPC-A and UPC-E enable



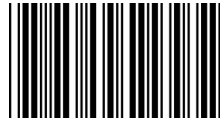
UPC-A enable



UPC-E enable



EAN-13 enable



EAN-8 enable

Force UPC-E to UPC-A Foramt



Force UPC-E to UPC-A foramt enable



★Force UPC-E to UPC-A foramt disable

Force UPC-A to EAN-13 Foramt



Force UPC-A to EAN-13 foramt enable



★Force UPC-A to EAN-13 foramt disable

Force EAN-8 to EAN-13 Foramt



★Force EAN-8 to EAN-13 foramt disable



Force EAN-8 to EAN-13 foramt enable



EAN-13 country code first "0" can transmitted



★EAN-13 country code first “0” can’t transmitted

Transmit UPC-A Check Digit



★Transmit UPC-A check digit enable



Transmit UPC-A check digit disable

Transmit UPC-E Leading Character



★Transmit UPC-E leading character enable



Transmit UPC-E leading character disable

Transmit UPC-E Check Digit



★Transmit UPC-E check digit enable



Transmit UPC-E check digit disable

Transmit EAN-8 Check Digit



★Transmit EAN-8 check digit enable



Transmit EAN-8 check digit disable

Transmit EAN-13 Check Digit



★ Transmit EAN-13 check digit enable



Transmit EAN-13 check digit disable

Transmit UPC-A Leading Character



★ Transmit UPC-A leading character enable



Transmit UPC-A leading character disable

Addendum



★UPC/EAN addendum off



Addendum 5 only



Addendum 2 only



Addendum 2 or 5

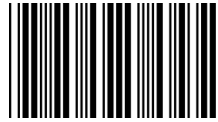
Addendum on Format



EAN/UPC+Addendum format with separator



★EAN/UPC+Addendum format without separator



★EAN/UPC+Addendum (none mandatory)



EAN/UPC+Addendum (mandatory)



EAN/UPC + addendum mandatory for 378/379 French
Supplement requirement not sent for other



EAN/UPC +addendum mandatory for 978/977
book land Supplement requirements
Not sent for other



EAN/UPC + addendum mandatory for 434/439
German Supplement requirement
Not sent for other



EAN/UPC + addendum mandatory for 419/414
Euro amounts Supplement requirement
not sent for other



EAN/UPC + addendum mandatory for 978/977
Book land Supplement requirement
optionally for other



EAN/UPC + addendum mandatory for 434/439
German Supplement requirement
optionally for other



EAN/UPC + addendum mandatory for 419/414
Euro amounts Supplement requirement
optionally for other



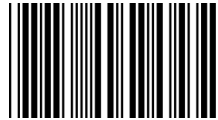
EAN/UPC + addendum mandatory for 491
Japanese (bookland) Supplement
requirement optionally for other



EAN/UPC + addendum mandatory for 491
Japanese (bookland) Supplement
requirement Not sent for other



★Double code not allowed



Double code mandatory for 978/192



Double code format without separator



★Double code format with separator



Double code format with free (one character)

Data Redundant Check

In this section, user can set decoder data redundant check, before it is accept as a good read. A higher data redundant check read setting offers more assurance that a barcode has been read correctly, while a lower setting allows faster scanning performance.

UPC-A Data Redundant Check



UPC-A data redundant check=0



★UPC-A data redundant check=1



UPC-A data redundant check=2



UPC-A data redundant check=3

UPC-E Data Redundant Check



UPC-E data redundant check=0



★UPC-E data redundant check=1



UPC-E data redundant check=2



UPC-E data redundant check=3

EAN-13 Data Redundant Check



EAN-13 data redundant check=0



★EAN-13 data redundant check=1



EAN-13 data redundant check=2



EAN-13 data redundant check=3

EAN-8 Data Redundant Check



EAN-8 data redundant check=0



★EAN-8 data redundant check=1



EAN-8 data redundant check=2



EAN-8 data redundant check=3

Code 39 Parameters Setting

The scanner can be programmed to support the standard code 39 or Full ASCII code 39. In addition, it is user's option transmit or not to transmit the start and stop characters. You can also enable or disable the check digit feature. If the check digit feature is enable, you have the further option to device whether the check digit is transmitted or not.

Character Setting

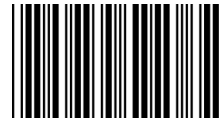


★ Standard code 39



FULL ASCII code 39

Start/Stop Character Transmission



Code 39 start/stop character transmission



★Code 39 start/stop character without transmission

Check Digit



Code 39 check digit calculate and transmit



Code 39 check digit calculate but without transmit

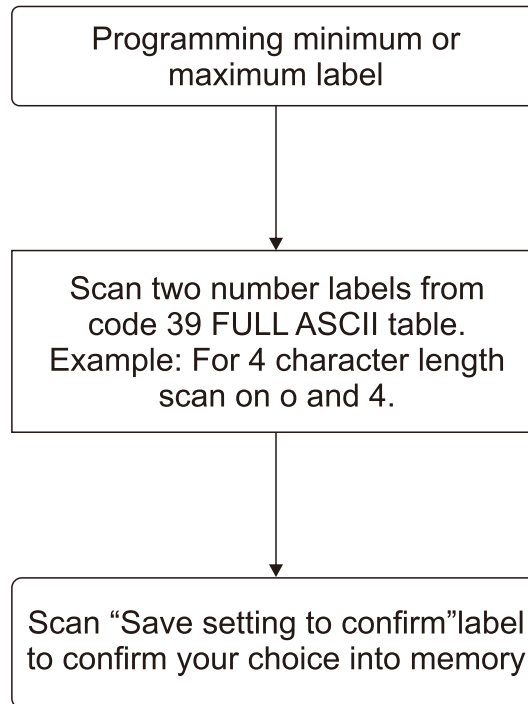


★No check character

Code 39 Reading Length Setting

The default code 39 length is 3-32 character. It can be set at minimum 1 digit and maximum 62 digits.

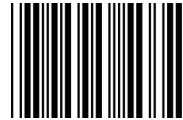
CODE LENGTH SETTING FLOW



Code 39 maximum length setting



Code 39 minimum length setting



Save setting to confirm

Concatenation



Code 39 concatenation enable



★Code 39 concatenation disable

Code 32 Prefix Character



Transmit Code 32 Prefix character



★Do not transmit Code 32 Prefix character

Data Redundant Check

In this section, users can use labels to set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a barcode has been read correctly while a lower setting allows faster scanning performance.



Code 39 data redundant check=0



★ Code 39 data redundant check=1



Code 39 data redundant check=2



Code 39 data redundant check=3

CODABAR Parameters Setting

In this section, there are varies setting for codabar symbology, including:

- *Check character verification or transmission
- *CODABAR concatenation
- *Data redundant check
- *Start/Stop character
- *Min/Max length setting

Format



Codabar start/stop character transmission ---- none



★Codabar start/stop character transmission ---- A, B, C ,D



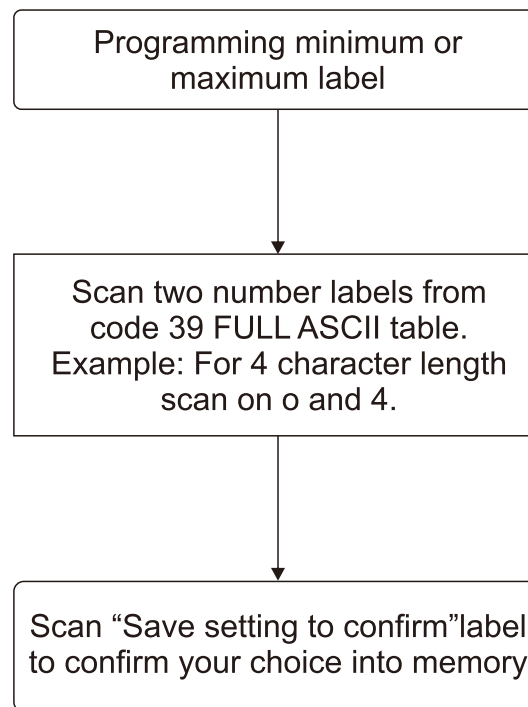
Codabar start/stop character transmission ---- DC1-DC4



Codabar start/stop character transmission ---- a/t,b/n,c/*,d/e

CODABAR Reading Length Setting

CODE LENGTH SETTING FLOW





Codabar maximum length setting



Codabar minimum length setting



Save setting to confirm

Concatenation



★Codabar concatenation disable



Codabar concatenation enable

Check Digit



★No check character



Check digit calculate but not transmit



Check digit calculate and transmit

Data Redundant Check

In this section, users can set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a bar code has been read correctly while a lower setting allows faster scanning performance.



★Codabar data redundant check = 0



Codabar data redundant check = 1



Codabar data redundant check = 2



Codabar data redundant check = 3

Code 128 Parameters Setting

In this section, there are various settings for code 128 symbology, including:

- *Check character verification or transmission
- *FNC2 concatenation
- *Data redundant check
- *FNC1 transmission for EAN-128
- *Min/Max length setting

Check Digit



No check character



Calculate but not transmit



Calculate and transmit

Code 128 FNC2 Concatenation

This function permits the temporary storage of a code in the decoder if this code starts with FNC 2 character. The message buffered will be concatenated and transmitted with the next code having no FNC 2 character.



Code 128 FNC2 concatenation enable

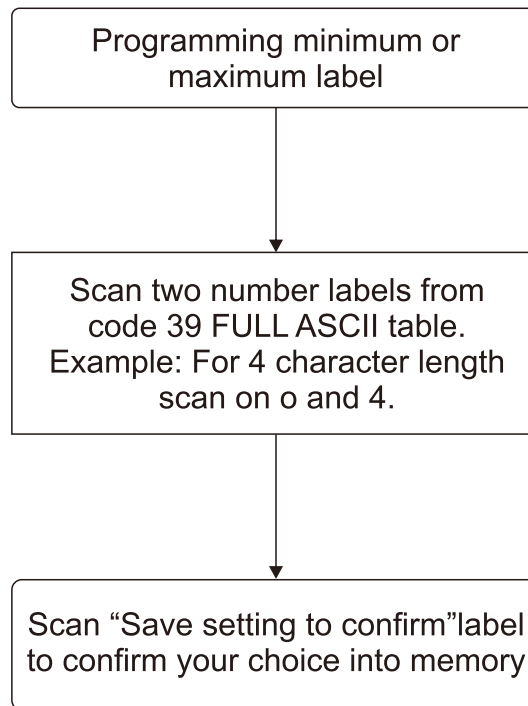


★Code 128 FNC2 concatenation disable

Code 128 Reading Length Setting

The default code 128 length is 3 ~62 character. It can be set at minimum 1 digit and maximum 62 digits

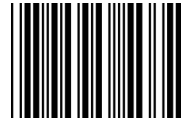
CODE LENGTH SETTING FLOW



Code 128 maximum code setting



Code 128 minimum code setting



Save setting to confirm

EAN-128 FNC1 Character



★EAN-128 FNC1 character transmitted



EAN-128 FNC1 not character transmitted

Data Redundant Check

In this section, users can set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a bar code has been read correctly while a lower setting allows faster scanning performance.



★Code 128 redundant check = 0



Code 128 redundant check = 1



Code 128 redundant check = 2



Code 128 redundant check = 3

ITF 2 of 5 Parameters Setting

In this section, there are varies ITF 2 of 5 symbology including:

- *Check character verification or transmission
- *Data redundant check
- *Two fixed length setting
- *Min./Max. length setting

Check Digit



★ITF 2 of 5 no check character



ITF 2 of 5 check digit calculate and transmit

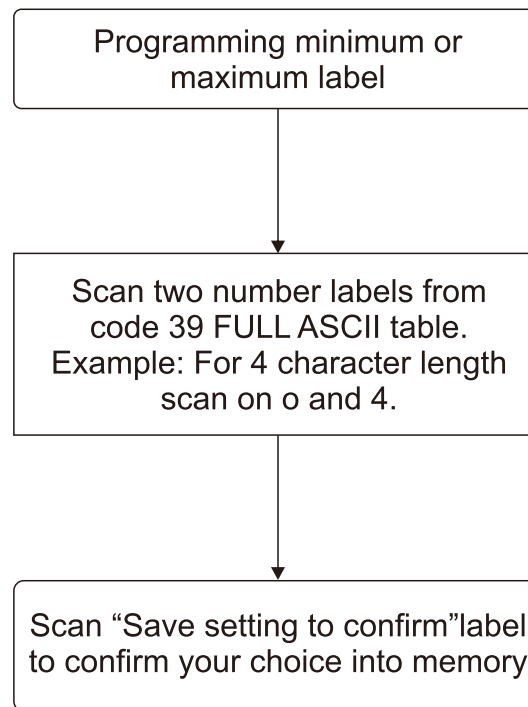


ITF 2 of 5 check digit calculate but without transmit

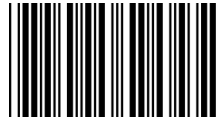
ITF 2 of 5 Reading Length Setting

The default ITF 2 of 5 length is 6 ~32 character. It can be set at minimum 1 digit and maximum 62 digits.

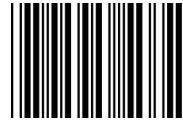
CODE LENGTH SETTING FLOW



ITF 2 of 5 code maximum length setting



ITF 2 of 5 code minimum length setting



Save setting to confirm



ITF 2 of 5 one fixed length setting



ITF 2 of 5 two fixed length setting

Data Redundant Check

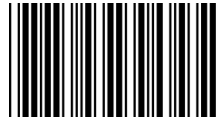
In this section, users can set decoder data redundant check, before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a bar code has been read correctly, while a lower setting allows faster scanning performance.



★ITF 2 of 5 data redundant check = 0



ITF 2 of 5 data redundant check = 1



ITF 2 of 5 data redundant check = 2



ITF 2 of 5 data redundant check = 3

Chinese Post Code Parameters Setting

In this section, there are various Chinese post code symbologies including:

*Data redundant check

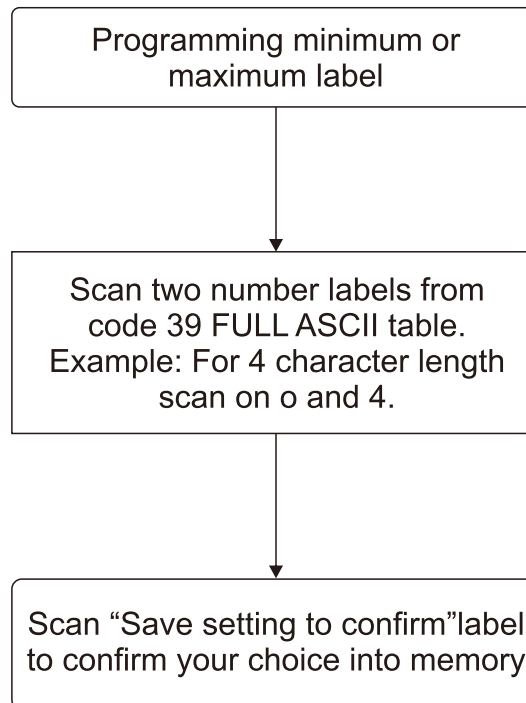
*Min./Max. length setting

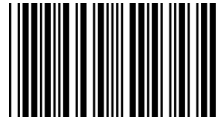
Chinese Post Code Reading Length Setting

The default Chinese post code length is 10 ~32 character. It can be set at minimum 1 digit and maximum 62 digits.

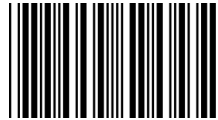
In order to avoid missing characters when scanning is incomplete, we recommend using a short-range length or fixed length.

CODE LENGTH SETTING FLOW





Chinese post code maximum length setting



Chinese post code minimum length setting



Save setting to confirm

Data Redundant Check

The option allows you to set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a bar code has been read correctly while a lower setting allows faster scanning performance.



★Chinese post code data redundant check = 0



Chinese post code data redundant check = 1



Chinese post code data redundant check = 2



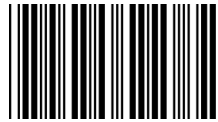
Chinese post code data redundant check = 3

MSI/Plessey Parameters Setting

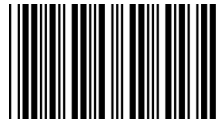
In this section, there are varies MSI/Plessey symbologies including:

- *Check character varies verification or transmission
- *Data redundant check
- *Min./Max. length setting

Double Check Digit



★MSI/Plessey double check digit calculate but not transmit



MSI/Plessey double check digit without calculate and transmit



MSI/Plessey double check digit calculate but only
first digit transmit



MSI/Plessey double check digit calculate and both transmit

Single Check Digit



MSI/Plessey single check digit calculate but without transmit

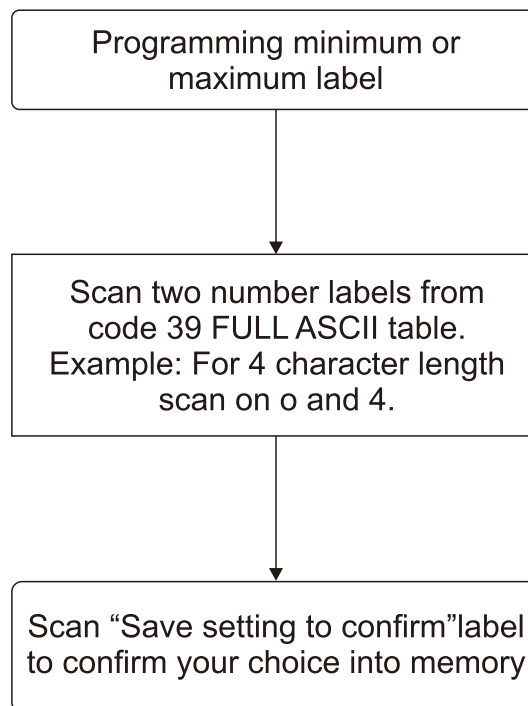


MSI/Plessey single check digit calculate and transmit

MSI/Plessey Code Reading Length Setting

The default MSI/Plessey code length is 6 ~32 character. It can be set at minimum 1 digit and maximum 62 digits.

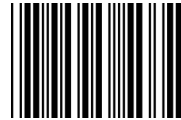
CODE LENGTH SETTING FLOW



MSI/Plessey maximum length setting



MSI/Plessey minimum length setting



Save setting to confirm

Data Redundant Check

The option allows you to set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a barcode has been read correctly while a lower setting allows faster scanning performance.



★MSI data redundant check = 0



MSI data redundant check = 1



MSI data redundant check = 2



MSI data redundant check = 3

Code 93 Parameters Setting

In this section, there are varies Code 93 symbologies including:

- *Check character varies verification or transmission
- *Data redundant check
- *Min./Max. length setting

Check Digit



★Code 93 check digit calculate but without transmit



Code 93 check digit not calculate and without transmit

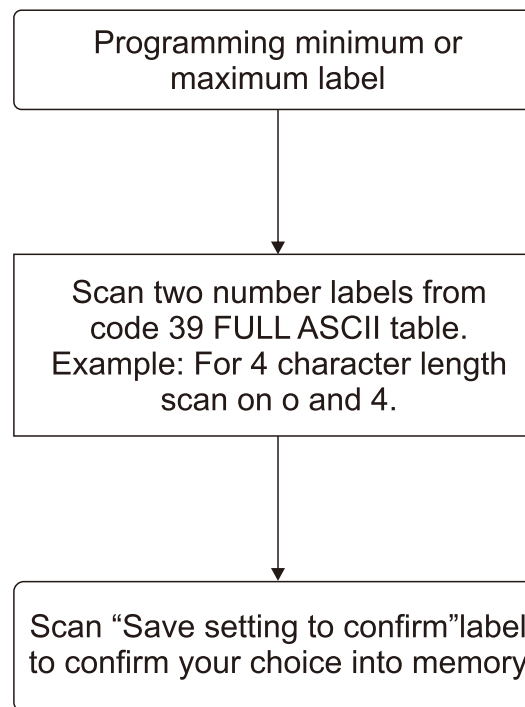


Code 93 check digit calculate and transmit

Code 93 Reading Length Setting

The default Code 93 length is 3 ~32 character. It can be set at minimum 1 digit and maximum 62 digits.

CODE LENGTH SETTING FLOW





Code 93 maximum length setting



Code 93 minimum length setting



Save setting to confirm

Data Redundant Check

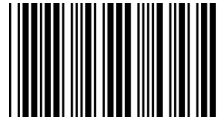
The option allows you to set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a barcode has been read correctly while a lower setting allows faster scanning performance.



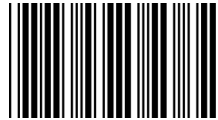
★Code 93 data redundant check = 0



Code 93 data redundant check = 1



Code 93 data redundant check = 2



Code 93 data redundant check = 3

RSS-14 Parameters Setting



RSS-14 standard enable



★RSS-14 standard disable



RSS-14 limited enable



★RSS-14 limited disable



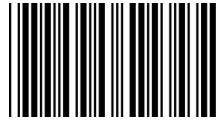
RSS-14 expanded enable



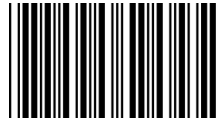
★RSS-14 expanded disable



★Transmit RSS-14 check digit



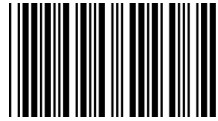
Do not transmit RSS-14 check digit



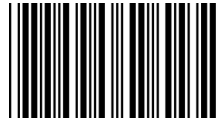
★ Transmit RSS-14 application ID (01)



Do not transmit RSS-14 application ID (01)



RSS-14/EAN-128 emulation enable (JC1)



★RSS-14/EAN-128 emulation disable (JC1)



★Transmit RSS limited check digit



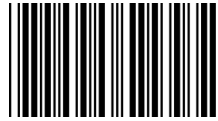
Do not transmit RSS limited check digit



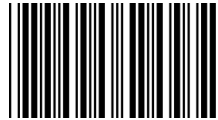
★Transmit RSS limited application ID (01)



Do not transmit RSS limited application ID (01)



★Transmit RSS expanded check digit



Do not transmit RSS expanded check digit



★Enable transmit AI(01) of expanded



Disable transmit AI(01) of expanded



RSS expanded/EAN-128 emulation enable (J)C1

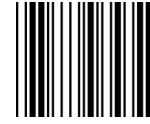


★RSS expanded/EAN-128 emulation disable (J)C1

FULL ASCII CODE TABLE



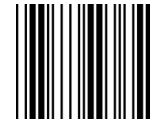
Full ASCII---NUL



Full ASCII---SOH
(Function key---Ins)



Full ASCII---STX
(Function key---Del)



Full ASCII---ETX
(Function key---Home)



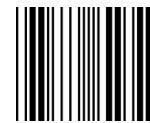
Full ASCII---EOT
(Function key---End)



Full ASCII---ENQ
(Function key---Up arrow)



Full ASCII---ACK
(Function key---Down arrow)



Full ASCII---BEL
(Function key---Left arrow)



Full ASCII---BS
(Function key---Backspace)



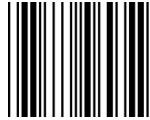
Full ASCII---HT
(Function key---Tab)



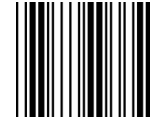
Full ASCII---LF
(Function key---Enter(num))



Full ASCII---VT
(Function key---Right arrow)



Full ASCII---FF
(Function key---PgUp)



Full ASCII---CR
(Function key---Enter(alphabet))



Full ASCII---SO
(Function key---PgDn)



Full ASCII---SI
(Function key---Shift)



Full ASCII---DLE
(Function key---5(num))



Full ASCII---DC1
(Function key---F1)



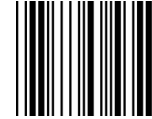
Full ASCII---DC2
(Function key---F2)



Full ASCII---DC3
(Function key---F3)



Full ASCII---DC4
(Function key---F4)



Full ASCII---NAK
(Function key---F5)



Full ASCII---SYN
(Function key---F6)



Full ASCII---EBT
(Function key---F7)



Full ASCII---CAN
(Function key---F8)



Full ASCII---EN
(Function key---F9)



Full ASCII---SUB
(Function key---F10)



Full ASCII---ESC
(Function key---F11)



Full ASCII---FS
(Function key---F12)



Full ASCII---GS
(Function key---ESC)



Full ASCII---RS
(Function key---Ctl(L))



Full ASCII---US
(Function key---Atl(L))



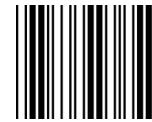
Full ASCII---SP



Full ASCII---!



Full ASCII---“



Full ASCII---#



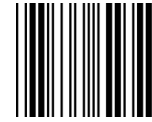
Full ASCII---\$



Full ASCII---%



Full ASCII---&



Full ASCII---'



Full ASCII---(



Full ASCII---)



Full ASCII---*



Full ASCII--- +



Full ASCII---,



Full ASCII--- -



Full ASCII---.



Full ASCII---/



Full ASCII---0



Full ASCII---1



Full ASCII---2



Full ASCII---3



Full ASCII---4



Full ASCII---5



Full ASCII---6



Full ASCII---7



Full ASCII---8



Full ASCII---9



Full ASCII--- :



Full ASCII--- ;



Full ASCII--- <



Full ASCII--- =



Full ASCII--- >



Full ASCII--- ?



Full ASCII--- @



Full ASCII--- A



Full ASCII--- B



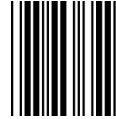
Full ASCII--- C



Full ASCII--- D



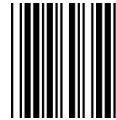
Full ASCII--- E



Full ASCII--- F



Full ASCII--- G



Full ASCII--- H



Full ASCII--- I



Full ASCII--- J



Full ASCII--- K



Full ASCII--- L



Full ASCII--- M



Full ASCII--- N



Full ASCII--- O



Full ASCII--- P



Full ASCII--- Q



Full ASCII--- R



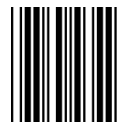
Full ASCII--- S



Full ASCII--- T



Full ASCII--- U



Full ASCII--- V



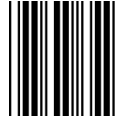
Full ASCII--- W



Full ASCII--- X



Full ASCII--- Y



Full ASCII--- Z



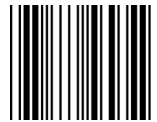
Full ASCII--- [



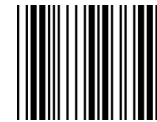
Full ASCII--- \



Full ASCII---]



Full ASCII--- ^



Full ASCII--- _



Full ASCII--- `



Full ASCII--- a



Full ASCII--- b



Full ASCII--- c



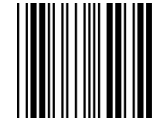
Full ASCII--- d



Full ASCII--- e



Full ASCII--- f



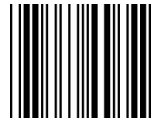
Full ASCII--- g



Full ASCII--- h



Full ASCII--- i



Full ASCII--- j



Full ASCII--- k



Full ASCII--- l



Full ASCII--- m



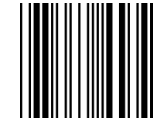
Full ASCII--- n



Full ASCII--- o



Full ASCII--- p



Full ASCII--- q



Full ASCII--- r



Full ASCII--- s



Full ASCII--- t



Full ASCII--- u



Full ASCII--- v



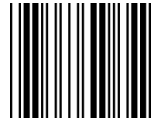
Full ASCII--- w



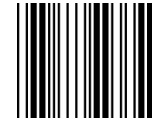
Full ASCII--- x



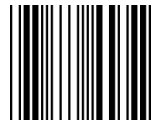
Full ASCII--- y



Full ASCII--- z



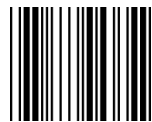
Full ASCII--- {



Full ASCII--- }



Full ASCII--- |



Full ASCII--- ~



Full ASCII--- DEL

APPENDIXES

Appendix A

CODE 39 FULL ASCII TABLE

| ASCII | CODE 39 | VAL EUR HEXA |
|-------|---------|-----------------|
| NUL | %U | 00 |
| SOH | \$A | 01 |
| STX | \$B | 02 |
| ETX | \$C | 03 |
| EOT | \$D | 04 |
| ENQ | \$E | 05 |
| ACK | \$F | 06 |
| BEL | \$G | 07 |
| BS | \$H | 08 |
| HT | \$I | 09 |
| LF | \$J | 0A |
| VT | \$K | 0B |
| FF | \$L | 0C |
| CR | \$M | 0D |
| SO | \$N | 0E |
| SI | \$O | 0F |
| DLE | \$P | 10 |
| DC1 | \$Q | 11 |
| DC2 | \$R | 12 |
| DC3 | \$S | 13 |
| DC4 | \$T | 14 |
| NAK | \$U | 15 |
| SYN | \$V | 16 |

| ASCII | CODE 39 | VAL EUR HEXA |
|-------|---------|-----------------|
| EBT | \$W | 17 |
| CAN | \$X | 18 |
| EM | \$Y | 19 |
| SUB | \$Z | 1A |
| ESC | %A | 1B |
| FS | %B | 1C |
| GS | %C | 1D |
| RS | %D | 1E |
| US | %E | 1F |
| SP | SP | 20 |
| ! | /A | 21 |
| " | /B | 22 |
| # | /C | 23 |
| \$ | /D | 24 |
| % | /E | 25 |
| & | /F | 26 |
| ' | /G | 27 |
| (| /H | 28 |
|) | /I | 29 |
| * | /J | 2A |
| + | /K | 2B |
| , | /L | 2C |
| - | - | 2D |

CODE 39 FULL ASCII TABLE

| ASCII | CODE 39 | VAL EUR HEXA |
|-------|---------|-----------------|
| . | . | 2E |
| / | / | 2F |
| 0 | 0 | 30 |
| 1 | 1 | 31 |
| 2 | 2 | 32 |
| 3 | 3 | 33 |
| 4 | 4 | 34 |
| 5 | 5 | 35 |
| 6 | 6 | 36 |
| 7 | 7 | 37 |
| 8 | 8 | 38 |
| 9 | 9 | 39 |
| : | /Z | 3A |
| ; | %F | 3B |
| < | %G | 3C |
| = | %H | 3D |
| > | %I | 3E |
| ? | %J | 3F |
| @ | %V | 40 |
| A | A | 41 |
| B | B | 42 |
| C | C | 43 |
| D | D | 44 |
| E | E | 45 |
| F | F | 46 |
| G | G | 47 |
| H | H | 48 |
| I | I | 49 |

| ASCII | CODE 39 | VAL EUR HEXA |
|-------|---------|-----------------|
| J | J | 4A |
| K | K | 4B |
| L | L | 4C |
| M | M | 4D |
| N | N | 4E |
| O | O | 4F |
| P | P | 50 |
| Q | Q | 51 |
| R | R | 52 |
| S | S | 53 |
| T | T | 54 |
| U | U | 55 |
| V | V | 56 |
| W | W | 57 |
| X | X | 58 |
| Y | Y | 59 |
| Z | Z | 5A |
| [| %K | 5B |
| \ | %L | 5C |
|] | %M | 5D |
| ^ | %N | 5E |
| _ | %O | 5F |
| ` | %W | 60 |
| a | +A | 61 |
| b | +B | 62 |
| c | +C | 63 |
| d | +D | 64 |
| e | +E | 65 |

CODE 39 FULL ASCII TABLE

| ASCII | CODE 39 | VAL EUR HEXA |
|-------|---------|-----------------|
| f | +F | 66 |
| g | +G | 67 |
| h | +H | 68 |
| l | +I | 69 |
| j | +J | 6A |
| k | +K | 6B |
| l | +L | 6C |
| m | +M | 6D |
| n | +N | 6E |
| o | +O | 6F |
| p | +P | 70 |
| q | +Q | 71 |
| r | +R | 72 |
| s | +S | 73 |
| t | +T | 74 |
| u | +U | 75 |
| v | +V | 76 |
| w | +W | 77 |
| x | +X | 78 |
| y | +Y | 79 |
| z | +Z | 7A |
| { | %P | 7B |
| | %Q | 7C |
| } | %R | 7D |
| ~ | %S | 7E |
| DEL | %T | 7F |

Appendix B

FUNCTION KEY EMULATION

| ASCII | CODE 39 | VAL EUR HEXA | ASCII | CODE 39 | VAL EUR HEXA |
|------------|---------|-----------------|--------|---------|-----------------|
| Ins | \$A | 01 | F11 | %A | 1B |
| Del | \$B | 02 | F12 | %B | 1C |
| Home | \$C | 03 | ESC | %C | 1D |
| End | \$D | 04 | Ctl(L) | %D | 1E |
| Up | \$E | 05 | Alt(L) | %E | 1F |
| Down | \$F | 06 | | | |
| Left | \$G | 07 | | | |
| Backspace | \$H | 08 | | | |
| TAB | \$I | 09 | | | |
| Enter(num) | \$J | 0A | | | |
| Right | \$K | 0B | | | |
| PgUp | \$L | 0C | | | |
| Enter | \$M | 0D | | | |
| PgDn | \$N | 0E | | | |
| Shift | \$O | 0F | | | |
| 5(num) | \$P | 10 | | | |
| F1 | \$Q | 11 | | | |
| F2 | \$R | 12 | | | |
| F3 | \$S | 13 | | | |
| F4 | \$T | 14 | | | |
| F5 | \$U | 15 | | | |
| F6 | \$V | 16 | | | |
| F7 | \$W | 17 | | | |
| F8 | \$X | 18 | | | |
| F9 | \$Y | 19 | | | |
| F10 | \$Z | 1A | | | |