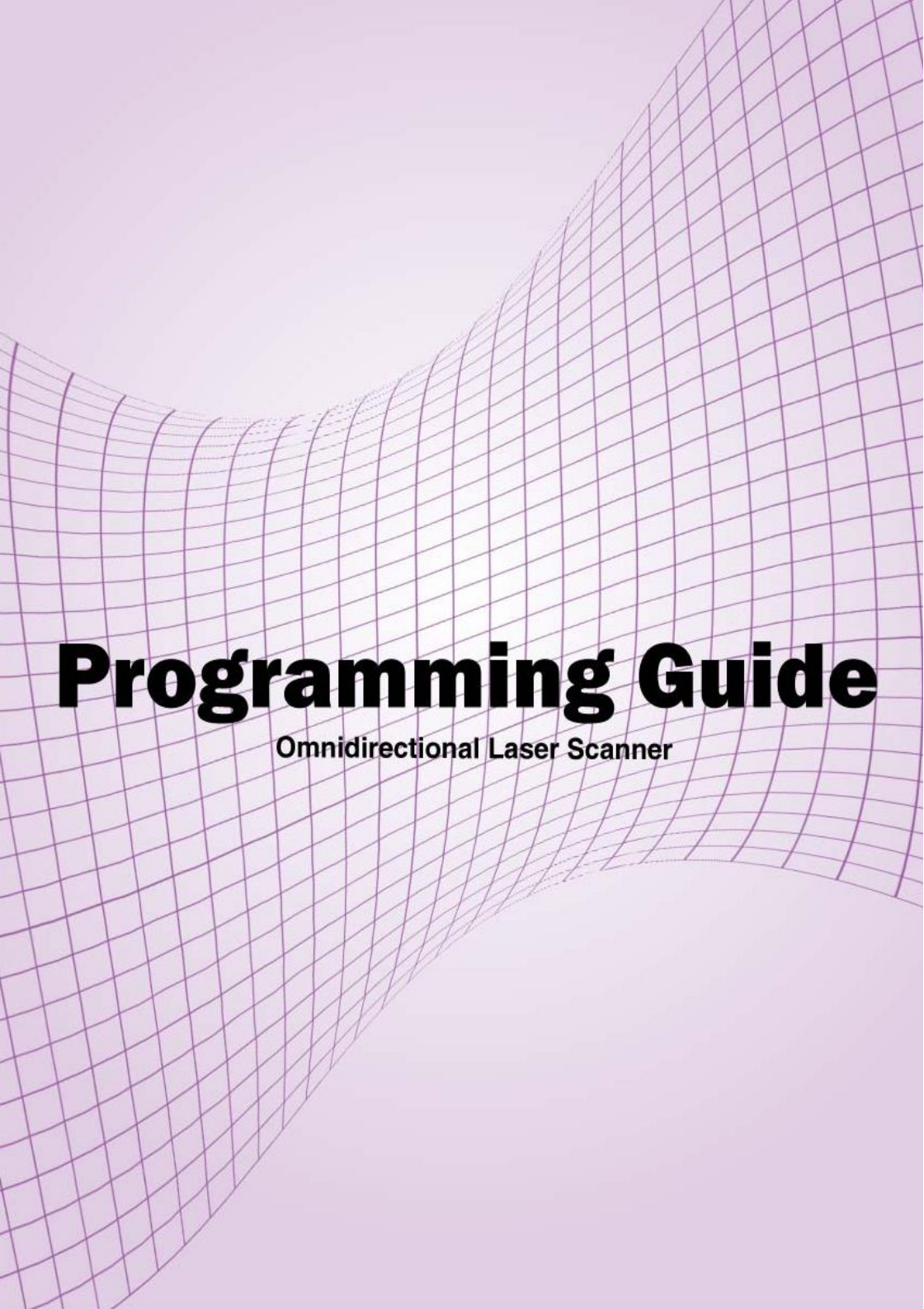
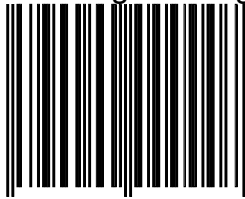




Programming Guide

Omnidirectional Laser Scanner

Enter/Exit Programming Mode



(This barcode can also be found at back cover page.)

Framed values are default values.

IMPORTANT NOTICE

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Specification or version may be subject to change without notice. The actual specification and version are based on the product delivered.

General Handling Precautions

- Do not dispose of the scanner in fire.
- Do not put the scanner directly in the sun or by any heat source.
- Do not use or store the scanner in a very humid place.
- Do not drop the scanner or allow it to collide violently with other objects.
- Do not take the scanner apart without authorization.

Printing Guidance

1. This programming guide is in A5 size. Please double check your printer setting before printing it out.
2. When printing barcodes for programming, the use of a high-resolution laser printer is strongly suggested for the best scan result.

Radio Notice

Some equipment generates uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions in this manual, it may cause interference to radio communications. The equipment has been tested and found to comply with the limits for a Class A computing device pursuant to EN55022 and 47 CFR, Part 2 and Part 15 of the FCC rules. These specifications are designed to provide reasonable protection against interference when operated in a commercial environment.

Radio and Television Interference

Operation of this equipment in a residential area can cause interference to radio or television reception. This can be determined by turning the equipment off and on.

The user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna.

Relocate the device with respect to the receiver.

Move the device away from the receiver.

Plug the device into a different outlet so that the device and the receiver are on different branch circuits.

If necessary, the user may consult the manufacturer, authorized dealer, or experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402 U.S.A., Stock No. 004000003454.

For CE-countries

This scanner is in conformity with CE standards. Please note that an approved, CE-marked power supply unit should be used in order to maintain CE conformance.

Laser Safety

The laser scanner complies with safety standard IEC 60825-1 for a Class I laser product. It also complies with CDRH as applicable to a Class IIa laser product. Avoid long term staring into direct laser light.

Radiant Energy

The laser scanner uses one low-power visible laser diodes operating at 650nm in an opto-mechanical scanner resulting in less than 3.9 μ W radiated power as observed through a 7mm aperture and averaged over 10 seconds.

Do not attempt to remove the protective housing of the scanner, as un-scanned laser light with a peak output up to 0.8mW would be accessible inside.

Laser Light Viewing

The scan window is the only aperture through which laser light may be observed from this product. A failure of the scanner motor, while the laser diode continues to emit a laser beam, may cause emission levels to exceed those for safe operation. The scanner has safeguards to prevent this occurrence. If, however, a stationary laser beam is emitted, the failing scanner should be disconnected from its power source immediately.

Adjustments

Do not attempt any adjustments or alteration of this product. Do not remove the protective housing of the scanner. There are no user-serviceable parts inside.

Caution

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Optical

The use of optical instruments with this product will increase the eye hazard. Optical instruments include binoculars, magnifying glasses, and microscopes but do not include normal eye glasses worn by the user.

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1. INTRODUCTION

This is an advanced programming guide for various omnidirectional laser scanners. This guide contains a series of programming barcode labels, and by scanning these codes, it can make configurations to the scanners. 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 specifications, please contact your dealer for details.

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 computers, 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 computers, an external power adapter may be required.

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

2. CHANGE THE SCANNER SETTING

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

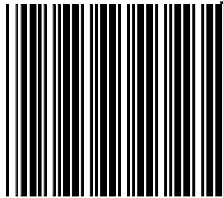
1. Scan the **Enter/Exit Programming Mode** barcode. There will be 2 beeps (low-high) indicating ready to make settings.
2. Scan barcodes for the desired feature (1 beep)
3. Scan the **Enter/Exit Programming Mode** barcode again to save the configuration. There will be 2 beeps (long-short) indicating a successful setting.

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

3. 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. (This label can also be found on p.8.)

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	200msec
Beeper Tone	
Frequency	medium
Duration	50msec
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
GS1 DataBar Omnidirectional (Formally RSS-14 Standard)	RS
GS1 DataBar Limited (Formally RSS Limited)	RL
GS1 DataBar Expanded (Formally RSS Expanded)	RX

Default Values of Keyboard Emulation Parameters

Function	Default Values
Keyboard type selection	IBM PC/AT USA
Message terminator	Enter/ carriage return

Default Values of Serial Communication Parameters

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

Default Values of USB Emulation Parameters

Function	Default Values
Keyboard Type	US Keyboard
Message Terminator	Enter

Default Values of Wand Emulation Parameters

Function	Default Values
Wand emulation speed	Normal
Wand emulation output	Black = 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/PLESSY	Disable
	Code 128	Disable
	Code 93	Disable
	EAN-128	Disable
	Italian Pharmacy	Disable
	ISSN/ ISBN	Disable
	GS1 DataBar (RSS)	Disable
Code 39	Codes	Standard
	Start/stop characters	Not transmitting
	Check digit	Disabled
	Concatenation	Off
	Length	3~32
Interleaved 2 of 5	Length	6-32
	Check digit	Disable
Chinese Post Code	Length	10~32
	Check digit	Disable
UPC/EAN/JAN	Format	All
	Addendum	Disable
	UPC-E=UPC-A	Disabled
	UPC-A leading digit	Transmit
	UPC-A check digit	Transmit
	UPC-E leading digit	Transmit
	UPC-E check digit	Transmit
Codabar	Type	Standard
	Start/stop characters	A, B, C, D
	Length	6~32 digits
Code 128	FNC 2 append	Disable
	Check digit	Disable
Code 93	Length	3~32
	Check digit	Not transmit
MSI	Length	6~32
	Check digit	Transmit
Italian Pharmacy	Transmit "A" Character	Not transmitting

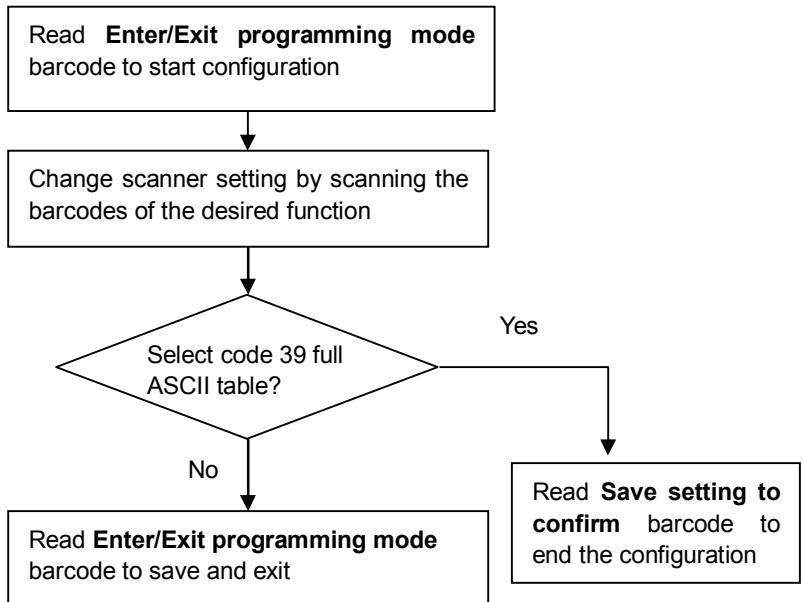
Default Values of Decoding Parameters (continued)

Function	Code	Default Value
GS1 DataBar (formally RSS)	GS1 DataBar Omnidirectional	Disable
	GS1 DataBar Limited	Disable
	GS1 DataBar Expanded	Disable
	Transmit GS1 DataBar Omnidirectional check digit	Enable
	Transmit GS1 DataBar Omnidirectional application ID (01)	Enable
	Transmit GS1 DataBar Limited check digit	Enable
	GS1 DataBar Omnidirectional/EAN-128 emulation	Disable
	Transmit GS1 DataBar Limited application ID (01)	Enable
	Transmit GS1 DataBar Expanded check digit	Enable
	Transmit AI(01) of Expanded	Enable
	GS1 DataBar Expanded /EAN-128 emulation	Disable

NOTE:

Contact your distributor to make sure if your model and firmware version support GS1 DataBar.

PROGRAM PROCEDURE USING BARCODE MENUS



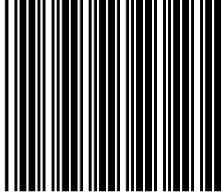
System Setting

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 wedge, wand emulation or USB. If not requested, the default interface is set in keyboard wedge interface (PC/AT). Use this section to change interfaces.

Reset (Return to Factory Default)

Reading of “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)

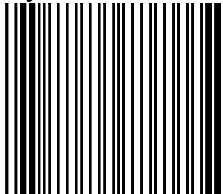


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Display Firmware Version

Reading of the “Display Firmware Version” will show the current firmware version on host.

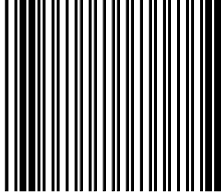
Display Firmware Version



Abort (Exit Programming Mode)

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

Abort (Exit Programming Mode)

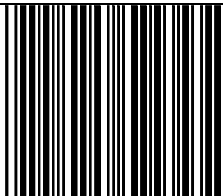


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Return to PC/AT Default

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

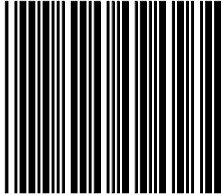
Return to PC/AT Default



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

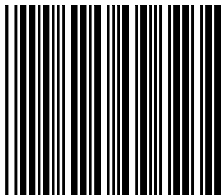


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Return to USB Default

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

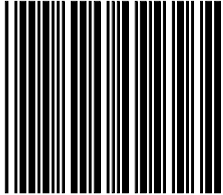
Return to USB Default



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 readily decoded by an external decoder designed for processing of wand data.

Return to Wand Emulation Default

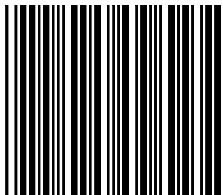


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Return as Customer Default

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

Return as Customer Default

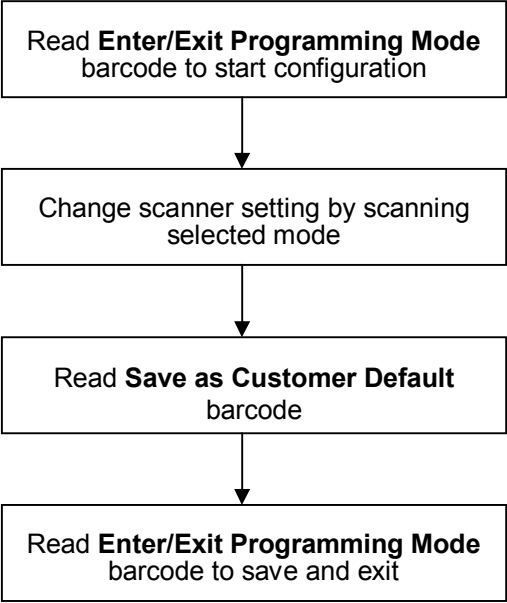


Save as Customer Default

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



How to Save as Customer Default



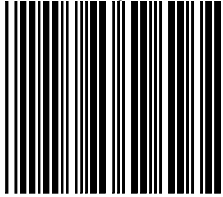
Sleep Timeouts Selection

In this section, user can set both laser and/or motor to enter 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:

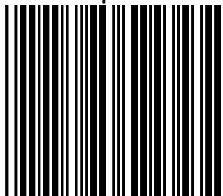
- 1. Laser always enters sleep mode before motor.**
- 2. If the motor timeout is set shorter than the motor timeout, then laser would enter sleep mode as motor enters sleep mode.**

Motor sleep mode off

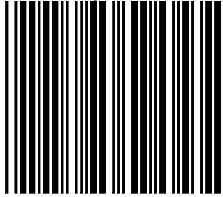


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Motor sleep time 5 min.

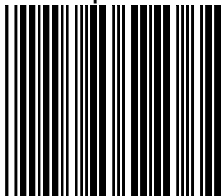


Motor sleep time 10 min.

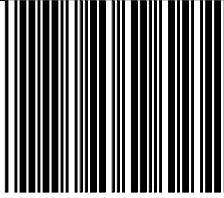


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Motor sleep time 20 min.

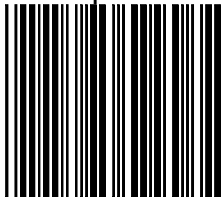


Motor sleep time 30 min.

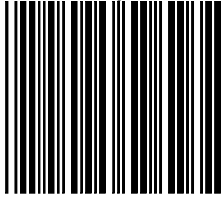


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Motor sleep time 60 min.

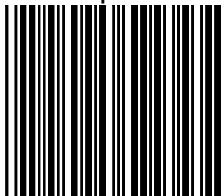


Laser sleep mode off

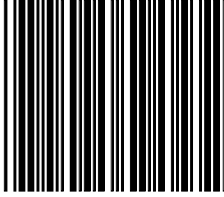


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Laser sleep time 5 min.

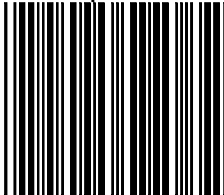


Laser sleep time 10 min.

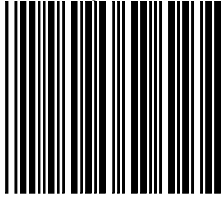


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Laser sleep time 15 min.

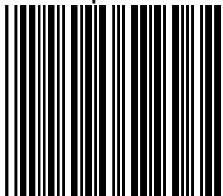


Laser sleep time 20 min.

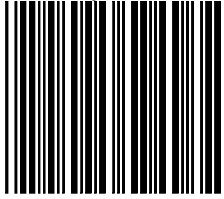


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Laser sleep time 25 min.



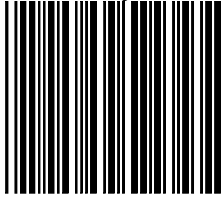
Laser sleep time 30 min.



Same Code Delay Time

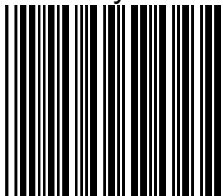
This parameter sets the minimum time allowed between decodes of the same label.

Same code delay time 50 msec.

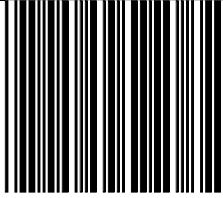


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Same code delay time 100 msec.

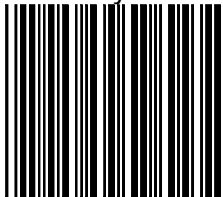


Same code delay time 200 msec.

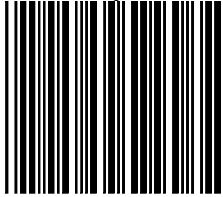


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Same code delay time 300 msec.

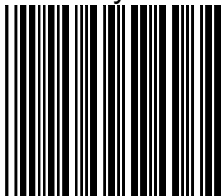


Same code delay time 400 msec.

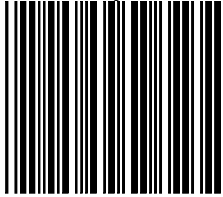


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Same code delay time 500 msec.

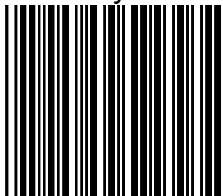


Same code delay time 600 msec.

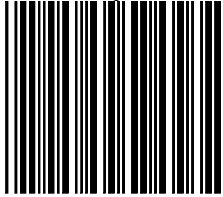


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Same code delay time 700 msec.

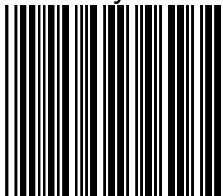


Same code delay time 800 msec.

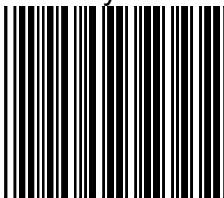


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Same code delay time 900 msec.

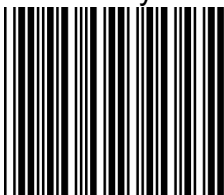


Same code delay time 1000 msec.



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

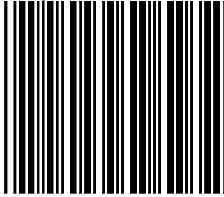
Same code delay time infinite



Beeper Sound Selection

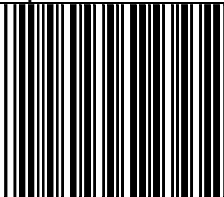
This section includes all setting labels for beeper sound settings, including tone frequency, volume, duration time, power on beep enable/disable, and enable/disable sound when the scanner enters sleep mode.

LED/Beep after transmission

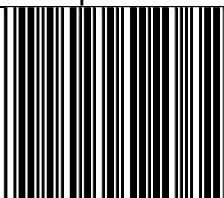


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

LED/Beep before transmission

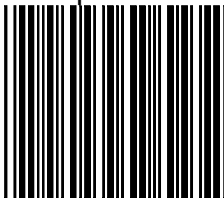


Power-up tone enable

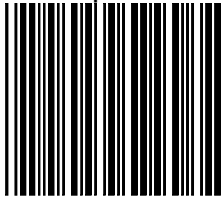


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Power-up tone disable

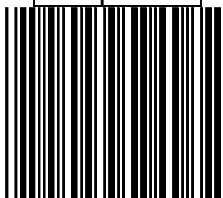


Sleep sound

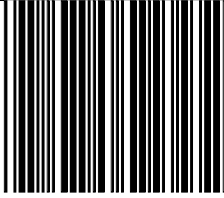


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Sleep silent

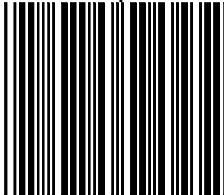


Medium beeper tone

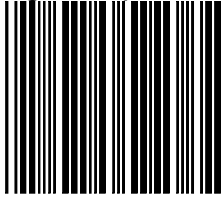


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Low beeper tone

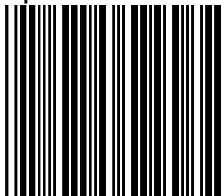


High beeper tone

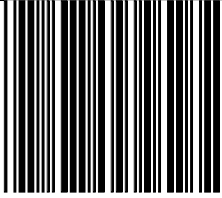


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Speaker disable

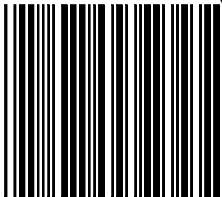


Beeper sound duration (100msec)

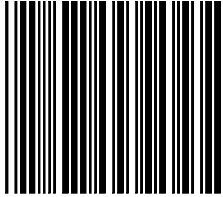


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Beeper sound duration (50msec)

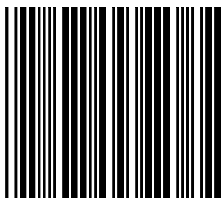


Beeper sound duration (20msec)

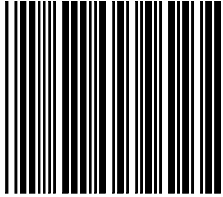


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Beeper sound duration (5msec)

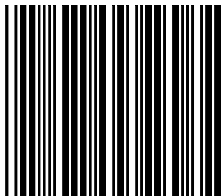


Beeper sound duration 200msec

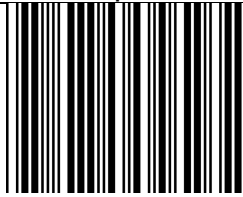


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Beeper sound duration 500msec

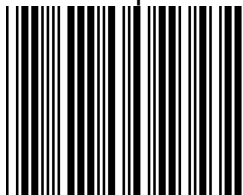


Loud beeper volume

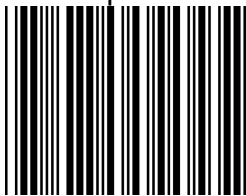


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Medium beeper volume



Low beeper volume



Barcode Identifier Code Setting

The scanner can transmit maximum 2 digits barcode identifier code for different types of barcodes. Use Enable or Disable identifier setting barcode to determine the transmission of barcode ID.

The procedure is as follows:

- 1.) Scan **Enter/Exit Programming Mode** label
- 2.) Scan **Barcode Identifier Setting Code** label
- 3.) Scan the new code mark from ASCII table (maximum 2 digits).
For example, if **AB** is the code mark, then scan **A** and **B**.
- 4.) Scan **Save Setting to Confirm** label
- 5.) Scan **Enter/Exit Programming Mode** label

Barcode Identifier Code Selection

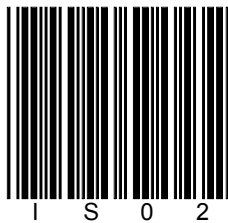


Scan “Enable identifier code” label to transmit the label ID as shown in the table below.

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/Plessy	P
GS1 DataBar Omnidirectional (RSS-14 Standard)	RS
GS1 DataBar Limited (RSS Limited)	RL
GS1 DataBar Expanded (RSS Expanded)	RX

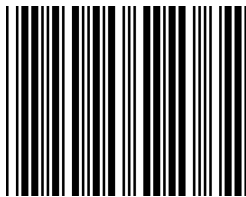


Set Message Format with Code Identifier



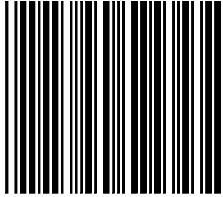
Code	Code identifier
UPC-A	A
UPC-E	E
EAN-8	FF
EAN-13	F
CODE 39	*
CODBAR	%
ITF 2 OF 5	i
CODE 93	&
CODE 128	#
MSI/PLESSY	@
EAN-128	P

Enable Identifier Code Table as AIM Standard



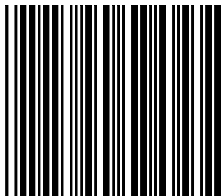
Barcode Identifier Code Setting

Code 39 identifier code setting

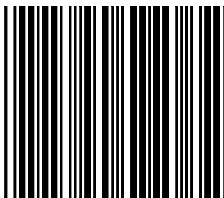


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ITF 2 of 5 identifier code setting

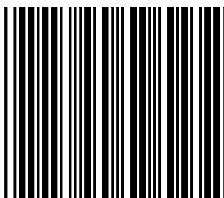


Chinese Post code identifier code setting

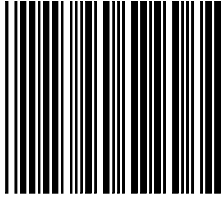


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

UPC-E identifier code setting

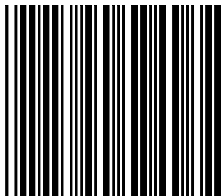


UPC-A identifier code setting

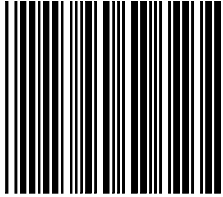


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN-13 identifier code setting

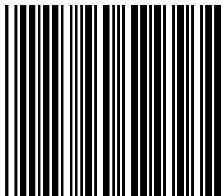


EAN-8 identifier code setting

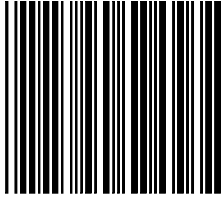


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Codabar identifier code setting

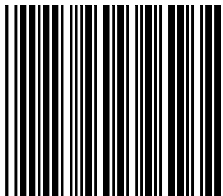


Code 128 identifier code setting

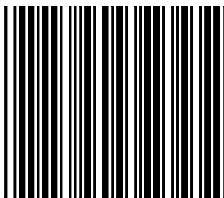


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 93 identifier code setting

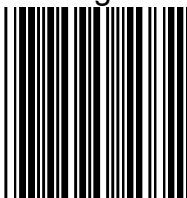


MSI identifier code setting

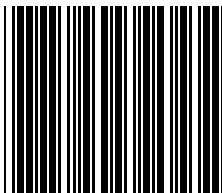


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Save setting to confirm

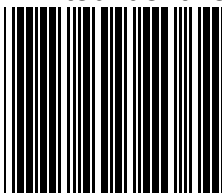


GS1 DataBar Omnidirectional identifier code setting

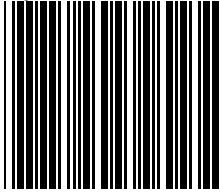


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

GS1 DataBar Limited identifier code setting



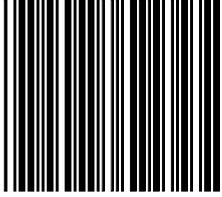
GS1 DataBar Expanded identifier code setting



Message delay

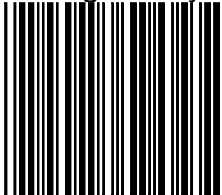
This section contains different delay time frames between two consecutive messages. This delay will be added before each data transmission.

Inter message delay 0 ms

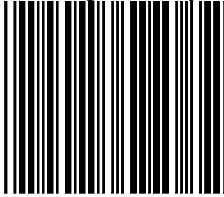


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Inter message delay 100 ms

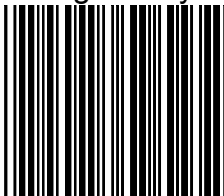


Inter message delay 500 ms



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

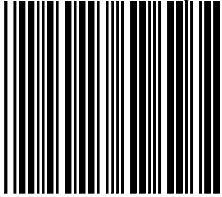
Inter message delay 1000 ms



Character Delay

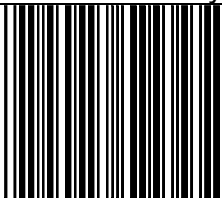
This option governs delay time between two consecutive characters; the delay time can be altered by scanning the following labels.

Character delay 5 ms

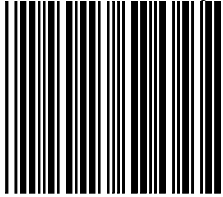


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Inter character delay 0 ms

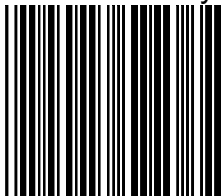


Inter character delay 10 ms

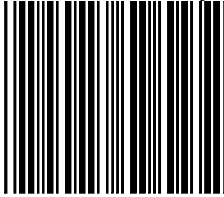


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Inter character delay 20 ms



Inter character delay 50 ms



Interface Communication Setting

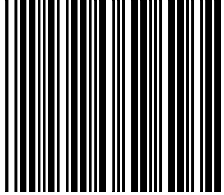
This section contains labels to configure the scanner to user's host terminal. The following interfaces are supported:

- *RS-232C interface
- *Keyboard wedge
- *USB interface
- *Wand emulation

RS-232C Interface Configuration

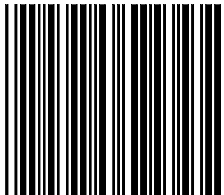
1. Baud Rate Setting

Baud Rate 38400

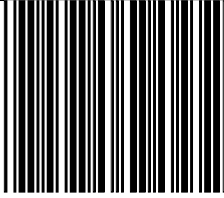


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Baud Rate 19200

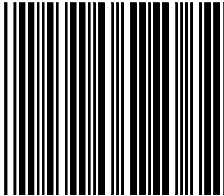


Baud Rate 9600

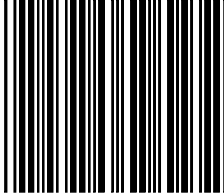


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Baud Rate 4800

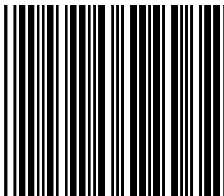


Baud Rate 2400

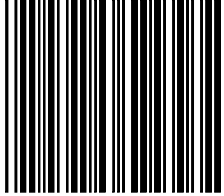


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Baud Rate 1200

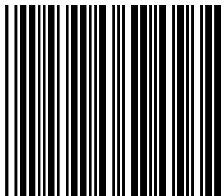


Baud Rate 57600



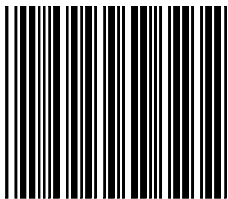
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Baud Rate 115200



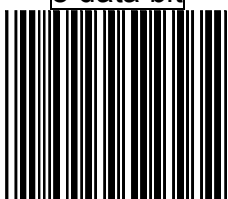
2. Date Bit Setting

7 data bit



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

8 data bit



3. Stop Bit Setting

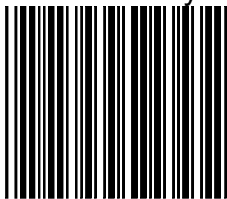


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.



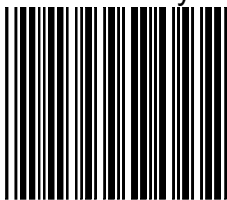
4. Parity Bit Setting

Even Parity

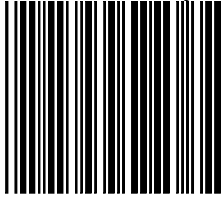


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Odd Parity

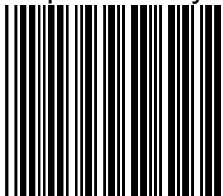


Mark Parity



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Space Parity





5. Handshaking Protocol

The RS-232C type scanner supports four handshaking protocols. With these options of communication protocol, users can tailor the scanner to meet the requirement of most systems. These handshaking protocols 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.

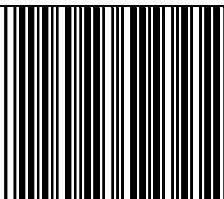
***ACK/NAK**

The scanner waits for an ACK or NAK signal from the host computer after each data transmission. Normally, the scanner will temporarily stored the scanned 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**

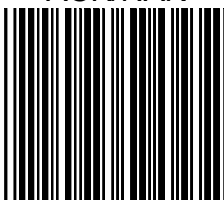
During the data communication, if a scanner receives an Xoff (ASCII 013H), it will stop the transmission at once. The scanner waits for a Xon (ASCII 01H) to start the transmission again.

None handshaking

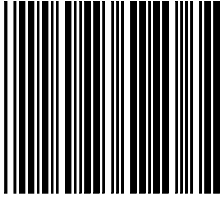


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ACK/NAK

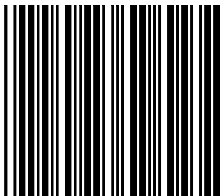


Xon/Xoff



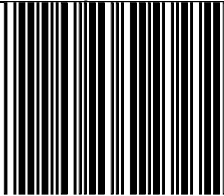
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

RTS/CTS



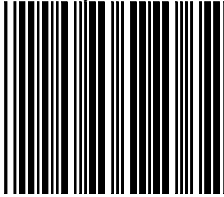
6. ACK/NAK Response Time Setting

ACK/NAK response time 300ms

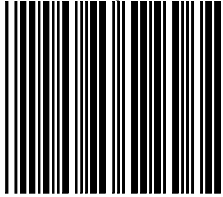


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ACK/NAK response time 500ms

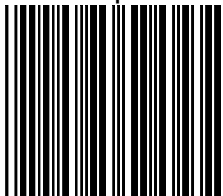


ACK/NAK response time 1s

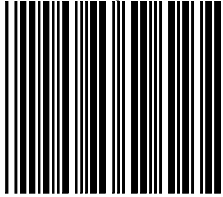


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ACK/NAK response time 2s

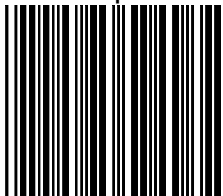


ACK/NAK response time 3s

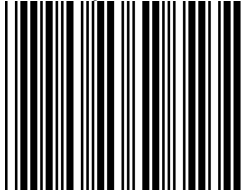


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ACK/NAK response time 5s

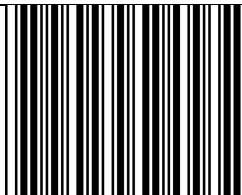


ACK/NAK response time Infinity

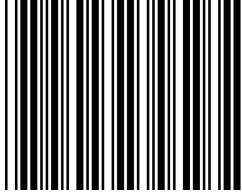


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Disable ACK/NAK timeout beeper



Enable ACK/NAK timeout beeper



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Enable beeper on<BEL> character



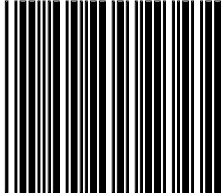
Ignore beep on <BEL>character



7. Message terminator for RS-232C

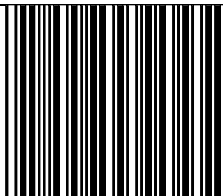
The series RS-232C type scanner can be programmed to append a terminator to every message sent via the serial port. Different terminator will be appended at the end of message sent from the serial port.

RS-232 message terminator — none

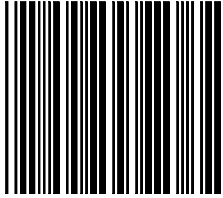


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

RS-232 message terminator — CR/LF

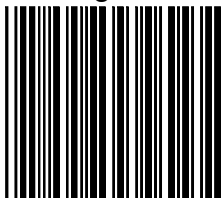


RS-232 message terminator – CR

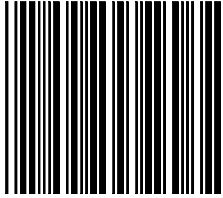


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

RS-232 message terminator – LF

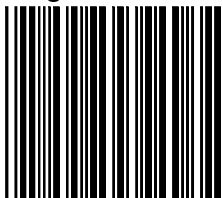


RS-232 message terminator — H tab

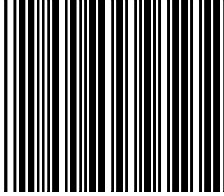


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

RS-232 message terminator — STX/ETX



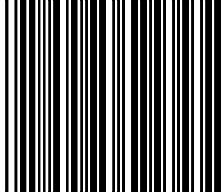
RS-232 message terminator — EOT



Keyboard Wedge Interface Configuration

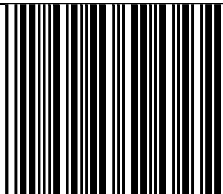
1. Message Terminator for Keyboard Wedge

Keyboard terminator---none

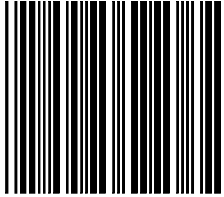


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Keyboard terminator---Enter

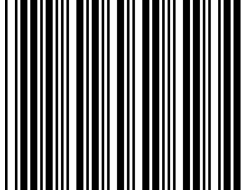


Keyboard terminator---H-TAB



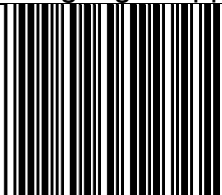
2. Keyboard Language Selection

Enable International keyboard type
(Alt method)

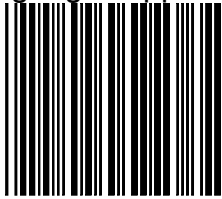


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Keyboard language support---USA

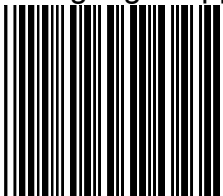


Keyboard language support---Germany

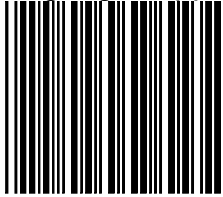


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Keyboard language support---UK

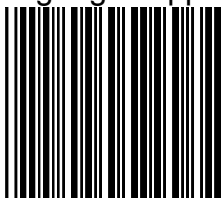


Keyboard language support---French

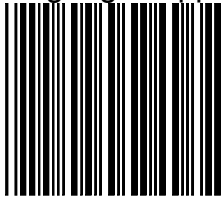


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Keyboard language support---Spanish

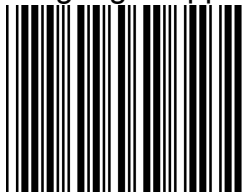


Keyboard language support--- Italian

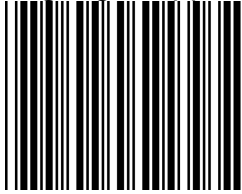


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Keyboard language support--- Swiss



Keyboard language support---Swedish

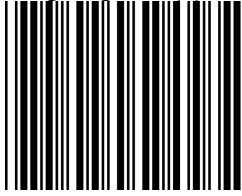


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Keyboard language support---Japanese



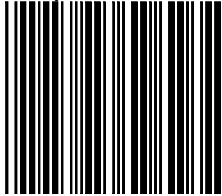
Keyboard language support---Belgium



3. Capital Lock

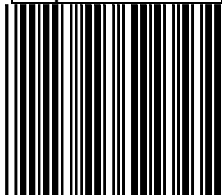
Select the suitable code to match your keyboard caps lock status.

Capital lock on



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

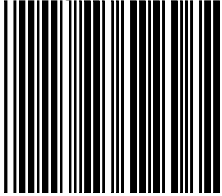
Capital lock off



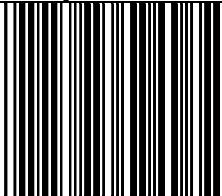
4. Function Key Emulation

In this section, users 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. (See Appendix B)

Function key emulation enable



Function key emulation disable



USB Interface Configuration

The USB mode is effectively a keyboard emulator that works with hosts, such as USB-compatible operating system and USB ports. USB compatible operating systems are Windows 98, Windows NT 5.0 and later. No additional software is needed since the USB driver supports its built-in operating system

1. Keyboard Type

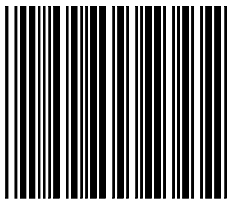


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.



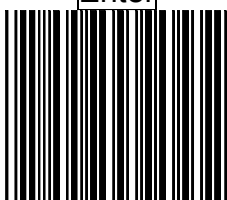
2. Message terminator for USB

None

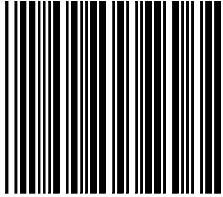


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Enter



H tab

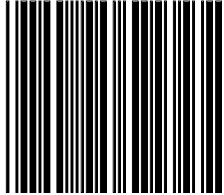


Wand Emulation Configuration

1. Emulation Speed Selection

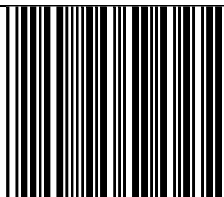
The data output speed can be set to befit the external decoder.

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

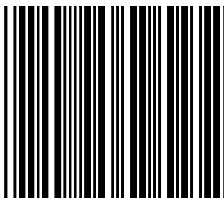


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Wand emulation speed =medium
(600 us narrow element width)

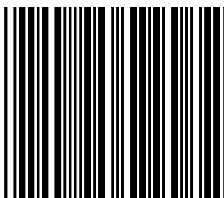


Wand emulation speed= high
(300 us narrow element width)



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

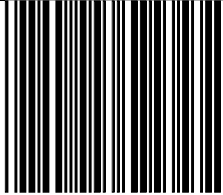
Wand emulation speed ---- higher
(100us narrow element width)



2. Emulation Data Output Selection

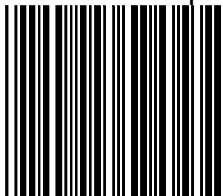
The decoded data output logic level can be set to benefit the external decoder.

Wand emulation data output black = high

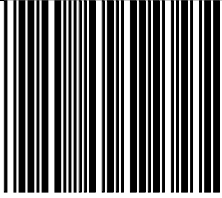


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Wand emulation data output black = low

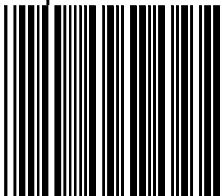


Wand Data Transmitted as Scanning



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Enable Wand output data format as Code 39



3. Emulation data idle state selection

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



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.



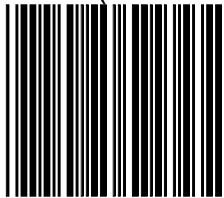
Data Editing

HEADER AND TRAILER

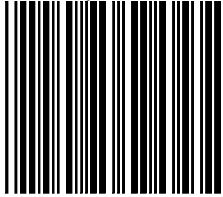
The **Header and Trailer** section allows you to append a header and/or a trailer to every message transmitted via the serial ports, USB or the keyboard port. There is no restriction in selecting header or trailer characters as far as the sum of the lengths of header and trailer is not greater than 10 digits.

1. Select either header or trailer you are going to program by scanning the corresponding label
2. Scan the character(s) 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 your choice into memory.

Header (Preamble)

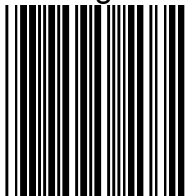


Trailer (Postamble)



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Save setting to confirm

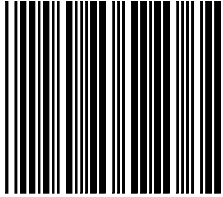


Truncate Header/Trailer Character

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.

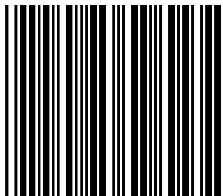
- 1.) Scan the **Enter/Exit programming mode** label.
- 2.) Select the **Truncate header or truncate trailer** label.
- 3.) Scan two barcode value from the full ASCII code table(0~9).
For example, scan **0** and **2** if you want to clear the number **2** from header.
- 4,) Scan **save setting to confirm**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

Truncate header character



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

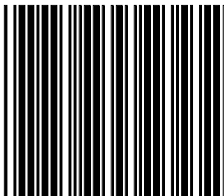
Truncate trailer character



Add Code Length

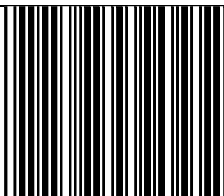
This option allows you to add the reading barcode numeric characters as header

Add code length as header enable (all barcode)



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Add code length as header disable (all barcode)



Auxiliary Handheld Scanner Setting

If the scanner is designed for in-counter application, it provides an auxiliary RS-232 port for the use of an additional peripheral device to be connected to the host system via the scanner itself. It is usually used to connect a handheld scanner for items too large or too heavy to be placed on the checkstand.

This section instructs how to enable the AUX port as a handheld scanner input port.

NOTE:

Contact your distributor to make sure if your omnidirectional scanner and firmware version support such a function.

Handheld Data Format Requirements

Before installation, the connected handheld scanner must be configured to transmit data format as below. Refer to the manual of the handheld scanner for more details or contact the distributor.

Baud rate	9600
Data bit	8
Parity	None
Stop bit	1
Handshaking	RTS/CTS
Message terminator	STX/ETX
Code 39 identifier code	M
ITF 2 of 5 identifier code	I
Chinese post code identifier code	H
UPC-A identifier code	A
UPC-E identifier code	E
EAN-13 identifier code	F
EAN-8 identifier code	FF
Codabar identifier code	N
Code 128 identifier code	K
Code 93 identifier code	L
MSI identifier code	P
GS1 CodeBar Omnidirectional identifier code	RS
GS1 CodeBar Limited identifier code	RL
GS1 CodeBar Expanded	RX
Industrial 2 of 5 identifier code	D
Code 11 identifier code	O
Standard 2 of 5 identifier code	S
Matrix 2 of 5 identifier code	G

Installation of An Auxiliary Handheld Scanner

Follow the steps below to use the auxiliary RS-232C port as a handheld scanner input port:

1. Configure the handheld scanner data format as above table requirements.
2. Turn off the host system.
3. Connect the handheld scanner to the auxiliary port.
4. Connect the external power supply for the auxiliary scanner (if required).
5. Activate the RS-232C auxiliary port of the in-counter scanner.

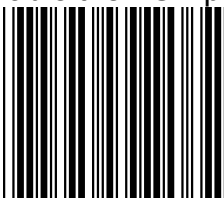
NOTE:

1. You may need to enable the AUX function of the handheld scanner after installation. Refer to the manual of the handheld scanner for more information or contact the distributor.
2. The auxiliary input port's data transmission format follows the main output format of the omnidirectional scanner, including barcode symbologies and related parameters. For example, if the handheld scanner can read Codabar while the omnidirectional scanner can not, the handheld scanner would decode a Codabar barcode without transmitting the data. To complete the data transmission, you have to re-program the omnidirectional scanner and enable this function.

Enable the AUX Port on the In-Counter Scanner

Read the barcode below to activate the RS-232 auxiliary port of the omnidirectional scanner. Before start, make sure your scanner model and firmware version supports such a function.

Enable the AUX port



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Disable the AUX port

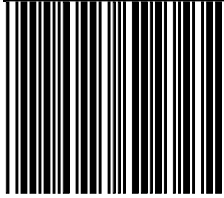


Symbology Configuration

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.

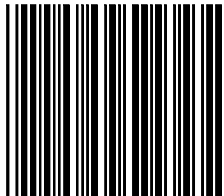
Reading Code Selection

Code 39 enable

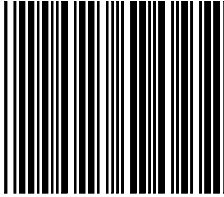


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 39 disable

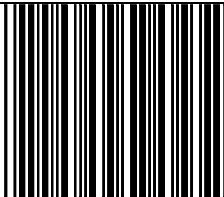


Codabar enable

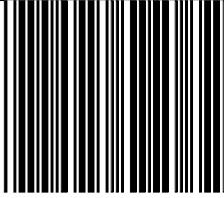


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Codabar disable

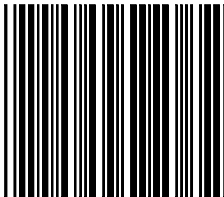


UPC/EAN/JAN enable

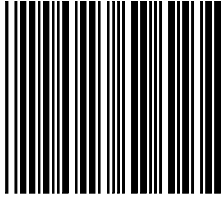


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

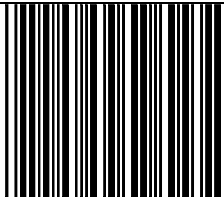


ITF 2 of 5 enable

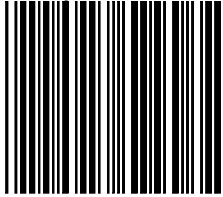


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ITF 2 of 5 disable

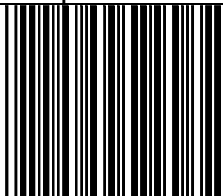


Chinese postcode enable

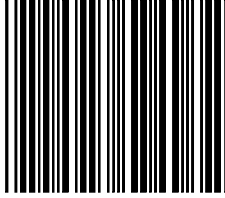


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Chinese postcode disable

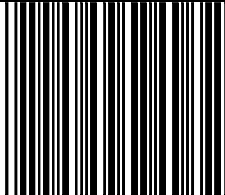


Code 128 enable

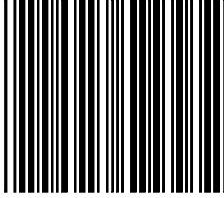


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 128 disable

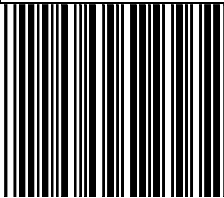


Code 93 enable

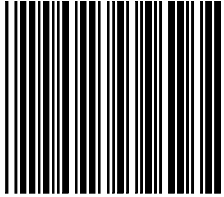


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 93 disable

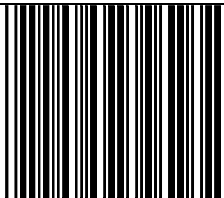


EAN-128 enable

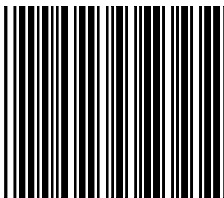


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN-128 disable

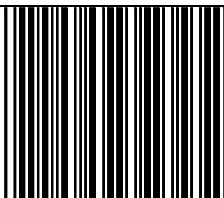


EAN convert to ISSN/ISBN

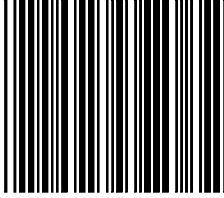


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN convert to ISSN/ISBN disable

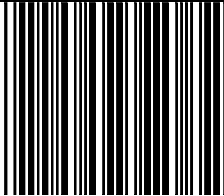


Code 32 enable

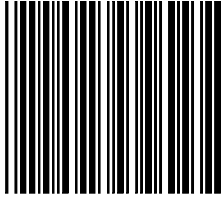


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 32 disable

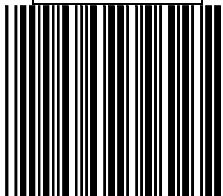


MSI enable



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

MSI disable



UPC/EAN Parameters Setting

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

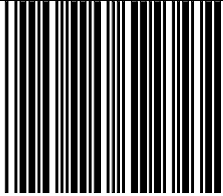
These derivatives are UPC-A, UPC-E, EAN-8, and EAN-13. Either 2 or 5 addendum digits is supported, addendum digits are those additional digits after normal stop character.

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

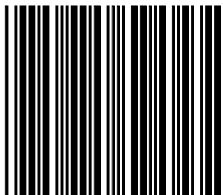
1. Format

UPC/EAN/JAN all enable

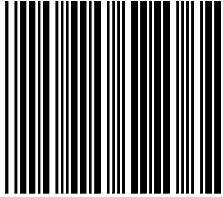


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN-8 or EAN-13 enable

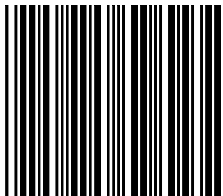


UPC-A and EAN-13 Enable

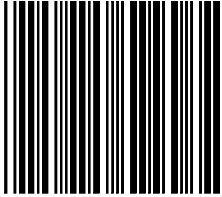


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

UPC-A and UPC-E Enable

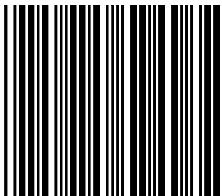


UPC-A enable

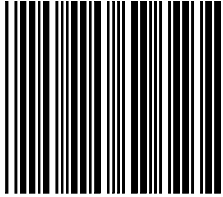


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

UPC-E enable

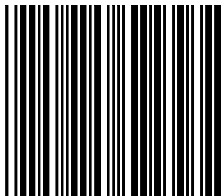


EAN-13 enable



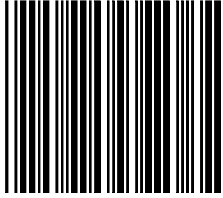
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN-8 enable



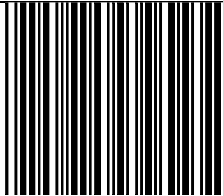
2. Force UPC-E to UPC-A format

Force UPC-E to UPC-A format enable



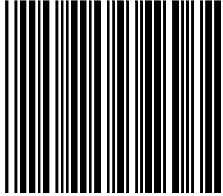
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Force UPC-E to UPC-A format disable



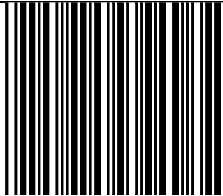
3. Force UPC-A to EAN-13 format

Force UPC-A to EAN-13 format enable



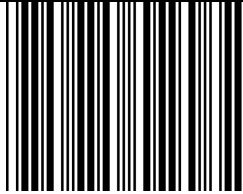
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Force UPC-A to EAN-13 format disable



4. Force EAN-8 to EAN-13 format

Force EAN-8 to EAN-13 format disable

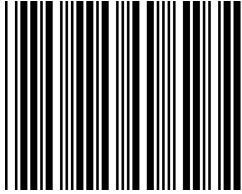


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Force EAN-8 to EAN-13 format enable

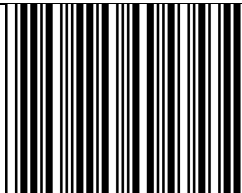


EAN-13 first “0” can transmitted



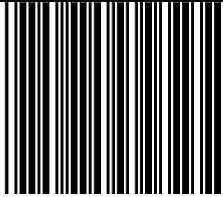
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN-13 first “0” can’t transmitted



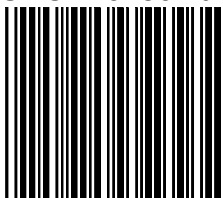
5. Transmit UPC-A check digit

Transmit UPC-A check digit enable



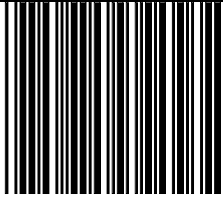
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit UPC-A check digit disable



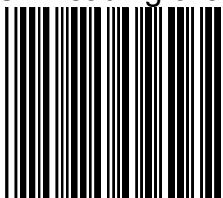
6. Transmit UPC-E leading character

Transmit UPC-E leading character enable



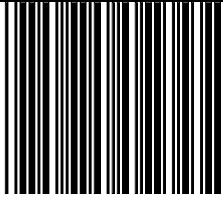
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit UPC-E leading character disable



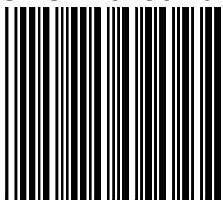
7. Transmit UPC-E check digit

Transmit UPC-E check digit enable



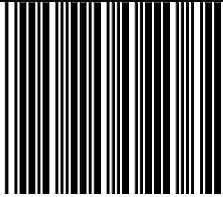
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit UPC-E check digit disable



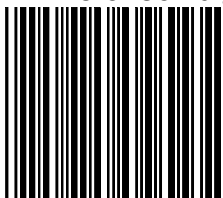
8. Transmit EAN-8 check digit

Transmit EAN-8 check digit enable



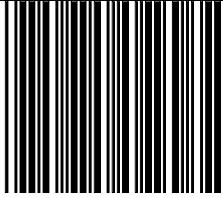
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit EAN-8 check digit disable



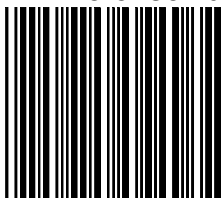
9. Transmit EAN-13 check digit

Transmit EAN-13 check digit enable



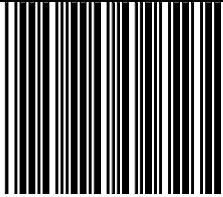
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit EAN-13 check digit disable



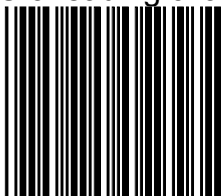
10. Transmit UPC-A leading character

Transmit UPC-A leading character enable



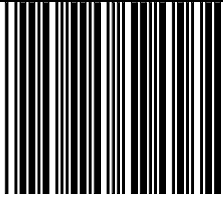
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit UPC-a leading character disable



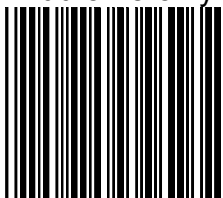
11. Addendum

UPC/EAN add on off

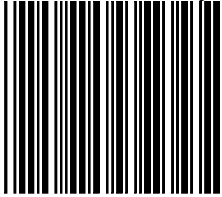


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Add on 5 only

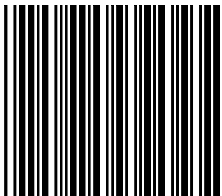


Add on 2 only



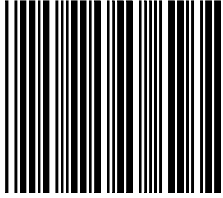
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Add on 2 or 5



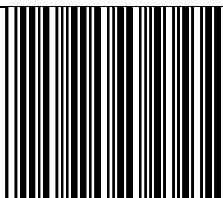
12. Add on format

Add on format with separator

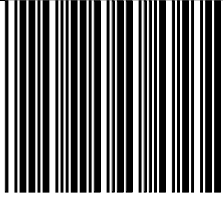


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Add on format without separator

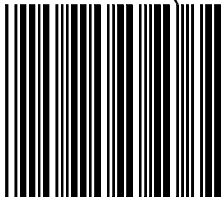


EAN/UPC +Add on (none mandatory)

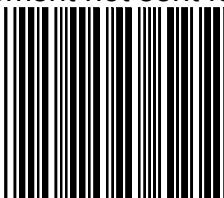


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN/UPC + Add on(mandatory)

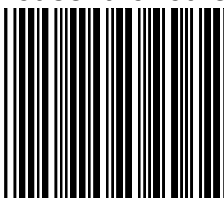


EAN/UPC + add on mandatory for 378/379 French Supplement
requirement not sent for other



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

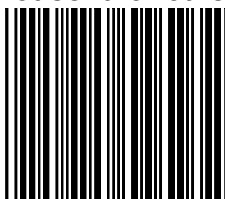


EAN/UPC + addon mandatory for 434/439
German Supplement requirement
Not sent for other



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

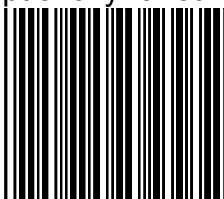


EAN/UPC + add on mandatory for 378/379
French Supplement requirement
optionally for other

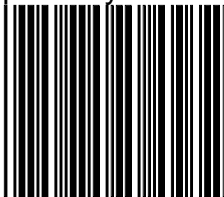


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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



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

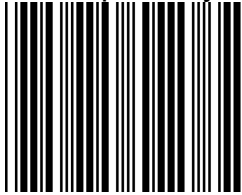


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

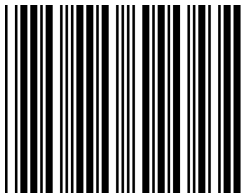


EAN/UPC + add on mandatory for 491
Japanese (bookland) Supplement
requirement optionally for other

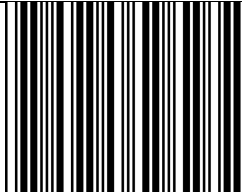


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

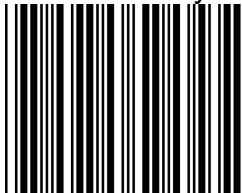


Double code not allowed

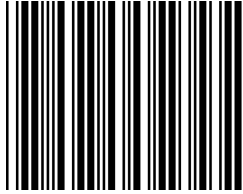


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Double code mandatory for 978/192

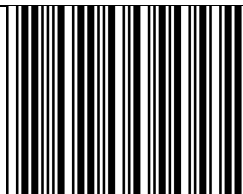


Double code format without separator

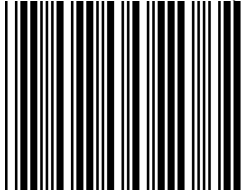


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Double code format with separator



Double code format with free (one character)

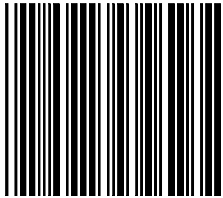


13. Data Redundant Check

In this section, user 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 barcode has been read correctly, while a lower setting allows faster scanning performance.

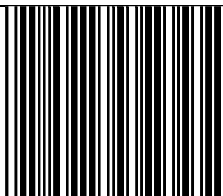
UPC-A Data Redundant Check

UPC-A data redundant check = 0

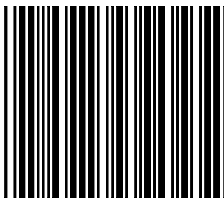


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

UPC-A data redundant check = 1

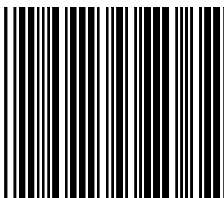


UPC-A data redundant check = 2



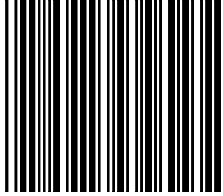
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

UPC-A data redundant check = 3



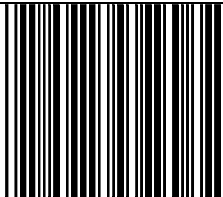
UPC-E Data Redundant Check

UPC-E data redundant check = 0

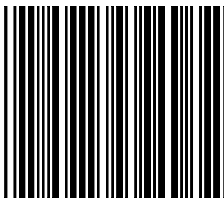


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

UPC-E data redundant check = 1

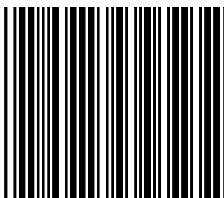


UPC-E data redundant check = 2



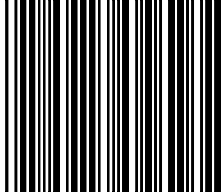
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

UPC-E data redundant check = 3



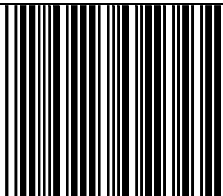
EAN-13 Data Redundant Check

EAN-13 data redundant check = 0

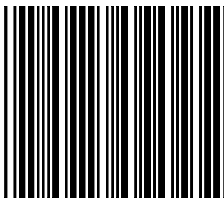


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN- 13 data redundant check = 1

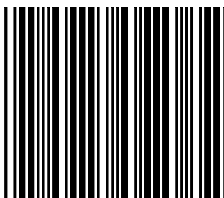


EAN-13 data redundant check = 2



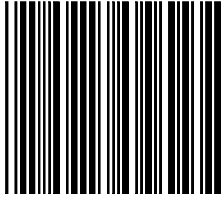
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN-13 data redundant check = 3



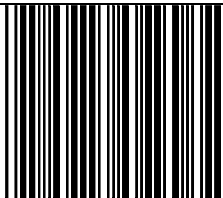
EAN-8 Data Redundant Check

EAN-8 data redundant check = 0

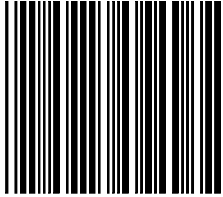


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN-8 data redundant check = 1

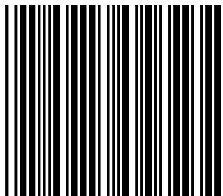


EAN-8 data redundant check =2



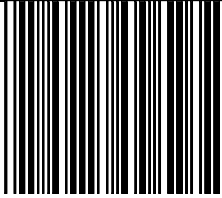
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

EAN-8 data redundant check = 3



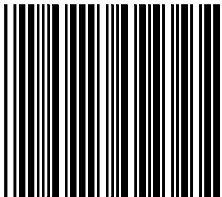
2 digit addendum data redundant check

2 digit addendum data redundant check = 0

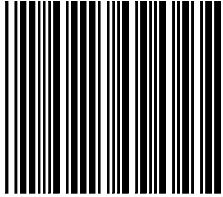


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

2 digit addendum data redundant check = 1

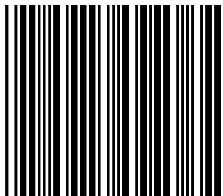


2 digit addendum data redundant check = 2



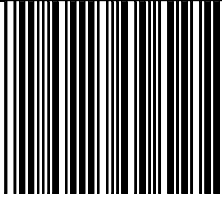
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

2 digit addendum data redundant check = 3



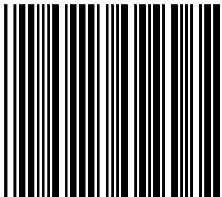
5 digit addendum data redundant check

5 digit addendum data redundant check = 0

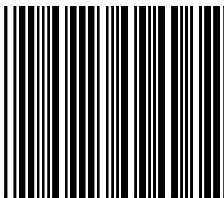


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

5 digit addendum data redundant check = 1

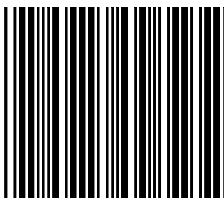


5 digit addendum data redundant check =2



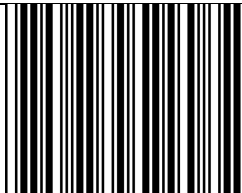
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

5 digit addendum data redundant check = 3



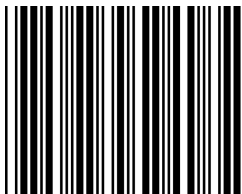
Addendum seek timeout

Addendum seek timeout =6

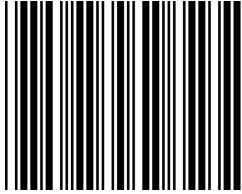


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Addendum seek timeout=7

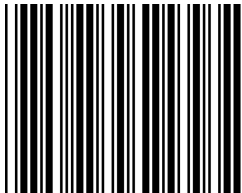


Addendum seek timeout=8

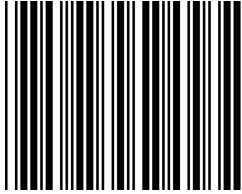


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Addendum seek timeout=9



Addendum seek timeout=10

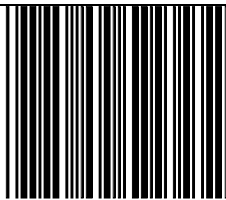


Code 39 Parameters Setting

The scanner can be programmed to support the standard code 39 or Full ASCII code 39. In addition, it is user's option to 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 enabled, you have the further option to decide whether the check digit is transmitted or not.

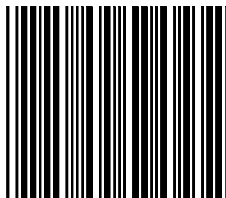
Character Set

Standard code 39



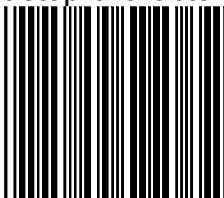
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

FULL ASCII code 39



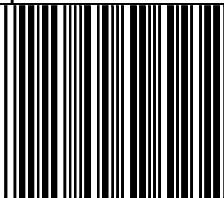
Start/Stop Character Transmission

Code 39 start/stop character transmission



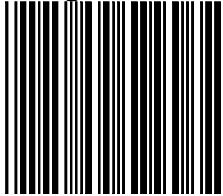
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 39 start/stop character without transmission



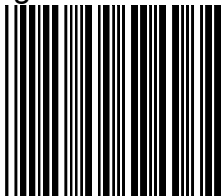
Check Digit

Code 39 check digit calculate and transmit

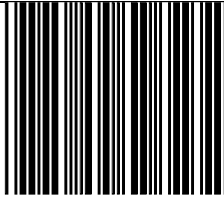


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 39 check digit calculate but without transmit



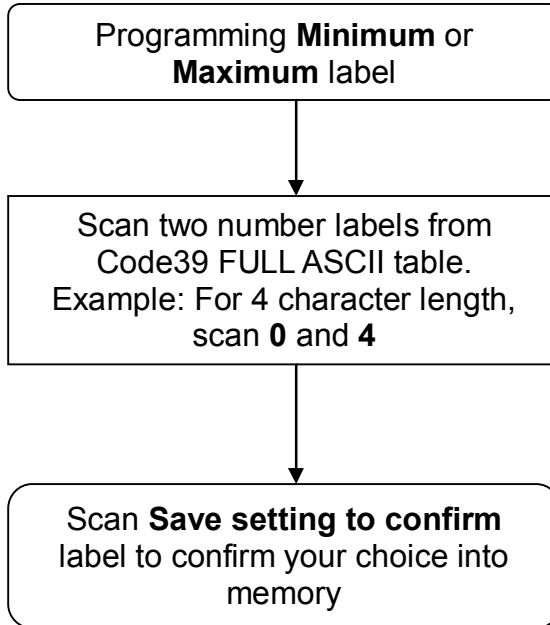
No check character



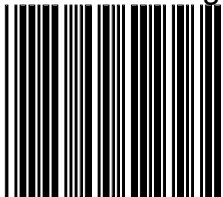
1. Code 39 reading length setting

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

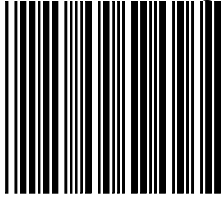
CODE LENGTH SETTING PROCESS



Code 39 maximum length setting

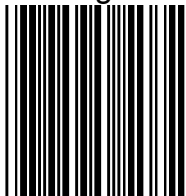


Code 39 minimum length setting



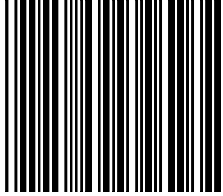
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Save setting to confirm



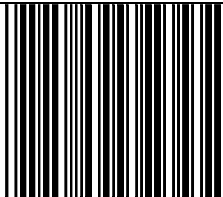
Concatenation

Code 39 concatenation enable



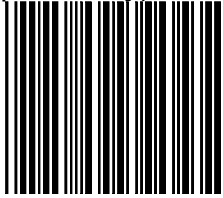
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 39 concatenation disable



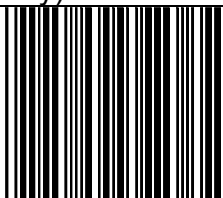
Code 32 “A” Character Transmit

Code 32 (Italian pharmacy) transmit “A” character



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

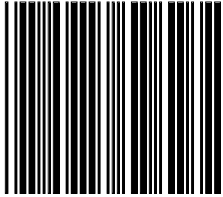
Code 32(Italian pharmacy) without transmitting “A” character



2. Data Redundant Check

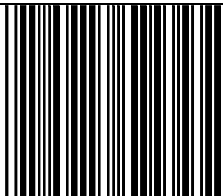
In this section, users can use labels to set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a barcode has been read correctly while a lower setting allows faster scanning performance.

Code 39 data redundant check = 0

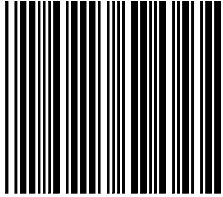


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 39 data redundant check = 1

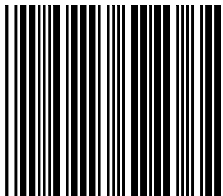


Code 39 data redundant check = 2



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 39 data redundant check = 3



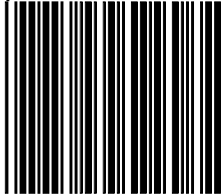
CODABAR Parameters Setting

In this section, there are varies settings for Codabar symbology, including:

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

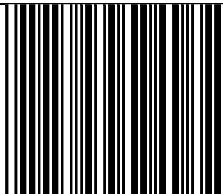
1. **Format**

Codabar start/stop character transmission ----none

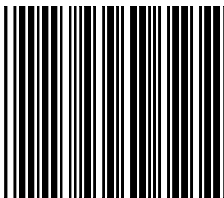


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

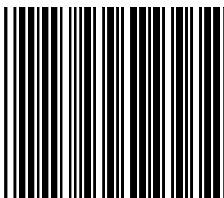


Codabar start/stop character transmission ---- DC1~DC4



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

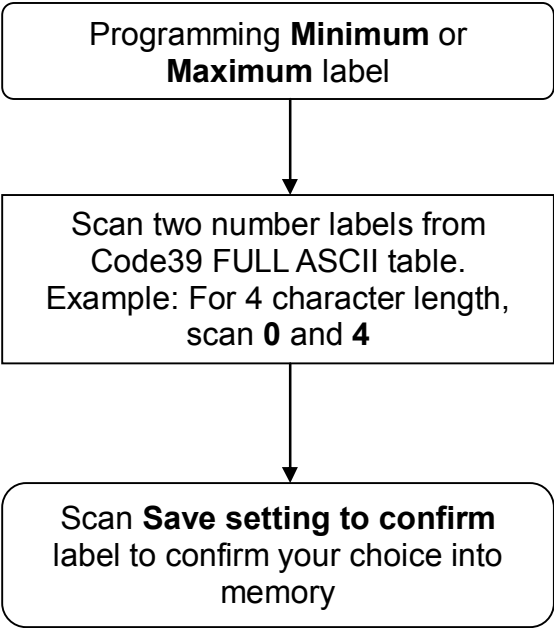
Codabar start/stop character transmission ---- a/t,b/n,c/*,d/e



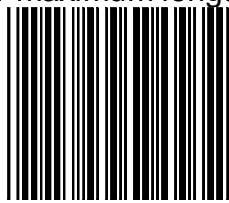
2. **CODABAR Reading Length Setting**

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

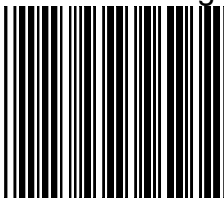
CODE LENGTH SETTING PROCESS



Codabar maximum length setting

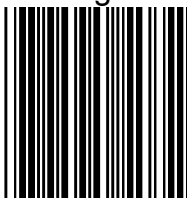


Codabar minimum length setting



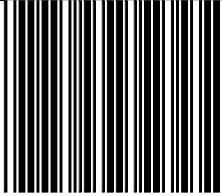
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Save setting to confirm



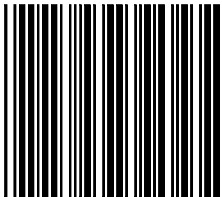
3. CODABAR Concatenation

Codabar concatenation disable



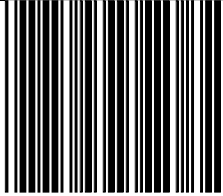
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Codabar concatenation enable



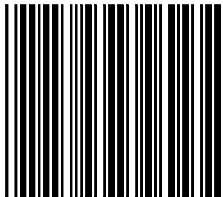
4. Check digit

No check character

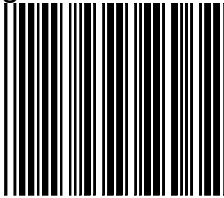


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Check digits calculate but not transmit



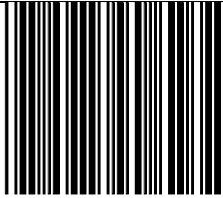
Check digit calculate and transmit



5. Data Redundant Check

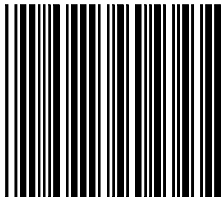
In this section, users can set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a bar code has been read correctly while a lower setting allows faster scanning performance.

Codabar data redundant check = 0

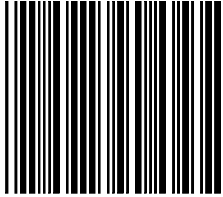


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Codabar data redundant check = 1

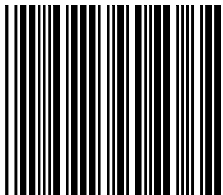


Codabar data redundant check = 2



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Codabar data redundant check = 3



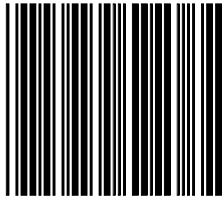
Code 128 Parameters Setting

In this section, there are varies setting for Code 128 symbology, including:

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

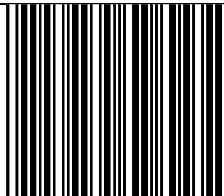
1. Check Digit

No check character

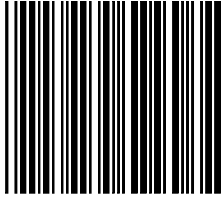


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Calculate but not transmit



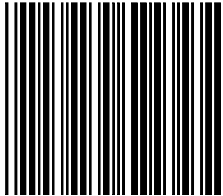
Calculate and transmit



2. Code 128 FNC2 concatenation

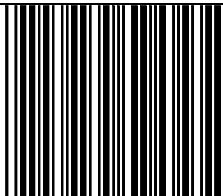
This function permits the temporary storage of a code in the decoder if this code starts with FNC 2 character. The message buffered will be concatenated and transmitted with the next code having no FNC 2 character

Code 128 FNC2 concatenation enable



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

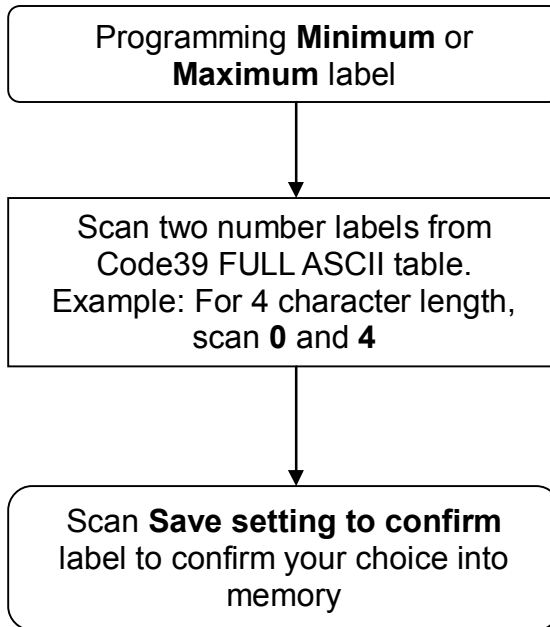
Code 128 FNC2 concatenation disable



3. 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

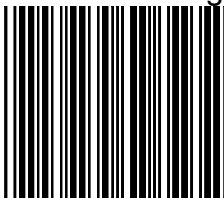
CODE LENGTH SETTING PROCESS



Code 128 maximum length setting

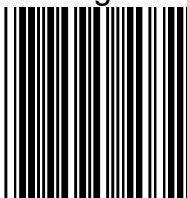


Code 128 minimum length setting



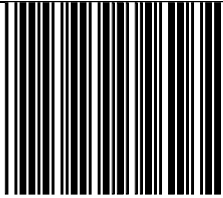
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Save setting to confirm



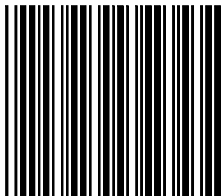
4. EAN-128 FNC1 CHARACTER

EAN-128 FNC1 Character transmitted



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

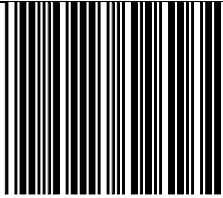
EAN-128 FNC1 not character transmitted



5. Data Redundant Check

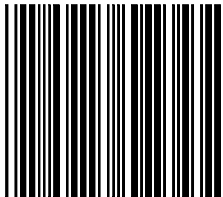
In this section, users can set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a bar code has been read correctly while a lower setting allows faster scanning performance

Code 128 data redundant check = 0

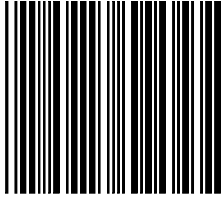


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 128 data redundant check = 1

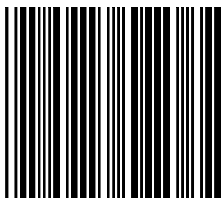


Code 128 data redundant check = 2



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 128 data redundant check = 3



ITF 2 of 5 Parameters Setting

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

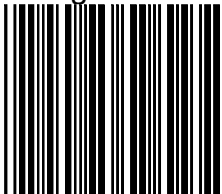
- Check character verification or transmission
- Data redundant check
- Two fixed length setting
- Min./Max. length setting

1. Check Digit

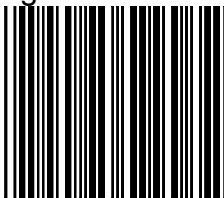


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ITF 2 of 5 check digit calculate and transmit



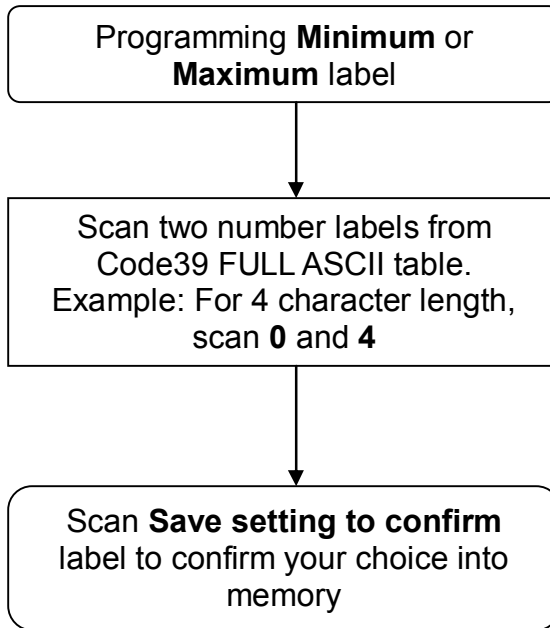
ITF 2 of 5 check digit calculate but without transmit



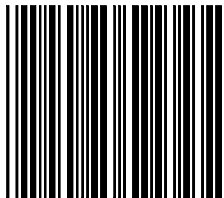
2. ITF 2 of 5 reading length setting

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

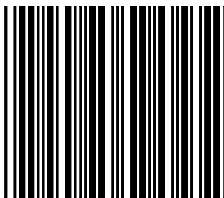
CODE LENGTH SETTING PROCESS



ITF 2 of 5 code maximum length setting

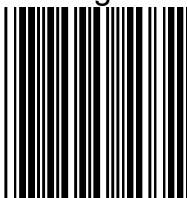


ITF 2 of 5 code minimum length setting

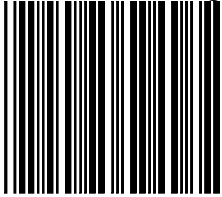


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Save setting to confirm

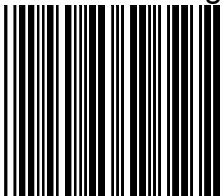


ITF 2 of 5 one fixed length setting



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

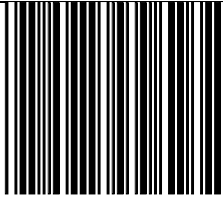
ITF 2 of 5 two fixed length setting



3. Data Redundant Check

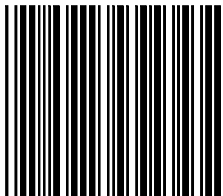
In this section, users can set decoder data redundant check, before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a bar code has been read correctly, while a lower setting allows faster scanning performance

ITF 25 data redundant check =0

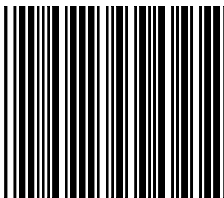


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ITF 25 data redundant check = 1

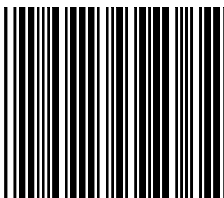


ITF 25 data redundant check = 2



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

ITF 25 data redundant check = 3



Chinese Post Code Parameters Setting

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

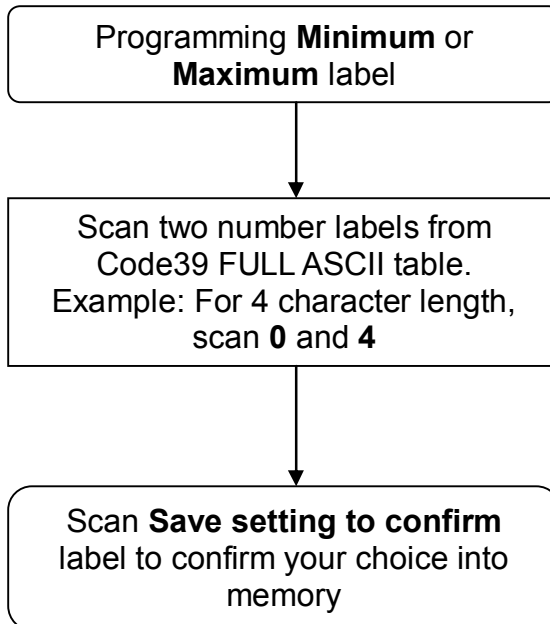
- Data redundant check
- Min./Max. length setting

1. Chinese Post Code Reading Length Setting

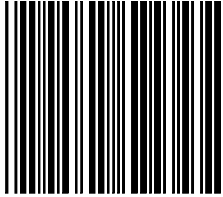
The default Chinese post code length is 10 ~32 character. It can be set at minimum 1 digit and maximum 62 digits.

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

CODE LENGTH SETTING PROCESS

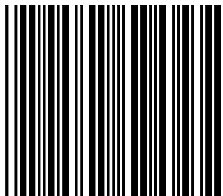


Chinese post code maximum length setting

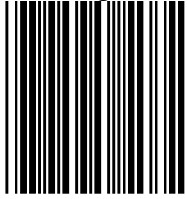


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Chinese post code minimum length setting



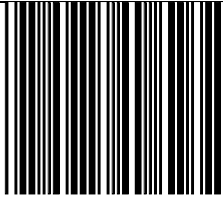
Save setting to confirm



2. Data Redundant Check

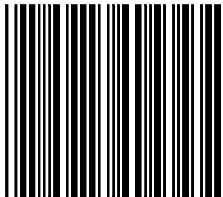
The option allows you to set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a bar code has been read correctly while a lower setting allows faster scanning performance

Chinese post code data redundant check = 0

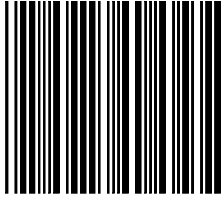


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Chinese post code data redundant check = 1

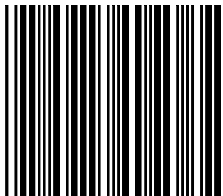


Chinese post code data redundant check = 2



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Chinese post code data redundant check = 3



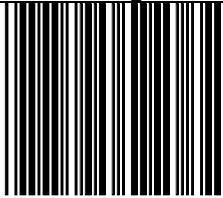
MSI/PLESSY Code Parameters Setting

In this section, there are varies set up for Chinese post code symbology, including:

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

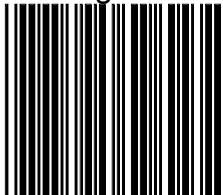
1. Double Check Digit

MSI/PLESSY double check digit calculate but not transmit

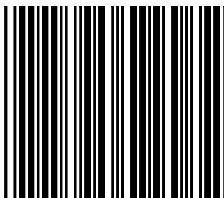


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

MSI/PLESSY double check digit without calculate and transmit

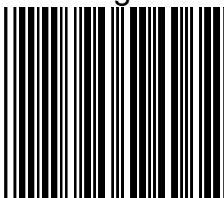


MSI/PLESSY double check digit calculate but only first digit
transmit



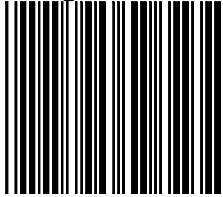
To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

MSI/PLESSY double check digit calculate and both transmit



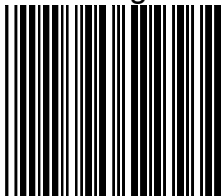
2. Single Check Digit

MSI/PLESSY single check digit calculate but without transmission



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

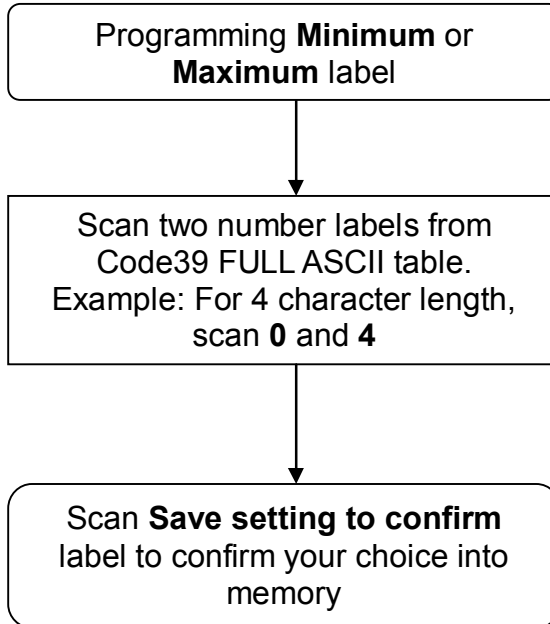
MSI/Plessy single check digit calculate and transmit



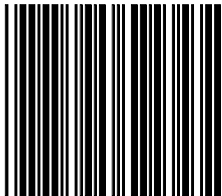
3. MSI/PLESSY code reading length setting

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

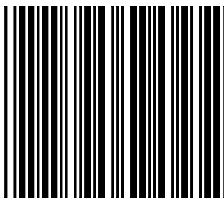
CODE LENGTH SETTING PROCESS



MSI/PLESSY maximum length setting

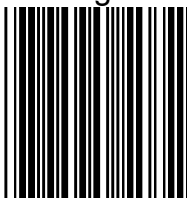


MSI/PLESSY minimum length setting



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

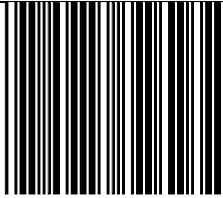
Save setting to confirm



4. Data Redundant Check

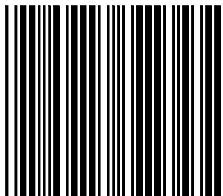
The option allows you to set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a barcode has been read correctly while a lower setting allows faster scanning performance

MSI data redundant check = 0

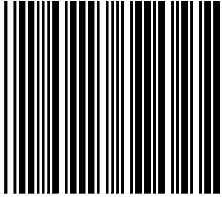


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

MSI data redundant check = 1

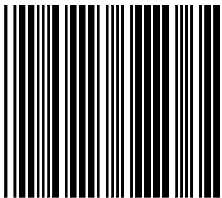


MSI data redundant check = 2



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

MSI data redundant check = 3



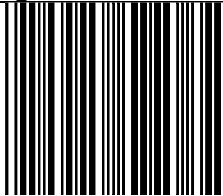
Code 93 Parameters Setting

In this section, there are varies set up for Code 93 symbology, including:

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

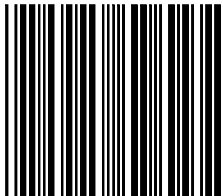
1. Check Digit

Code 93 check digit calculate but without transmit

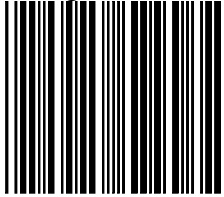


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 93 check digit not calculate and without transmit



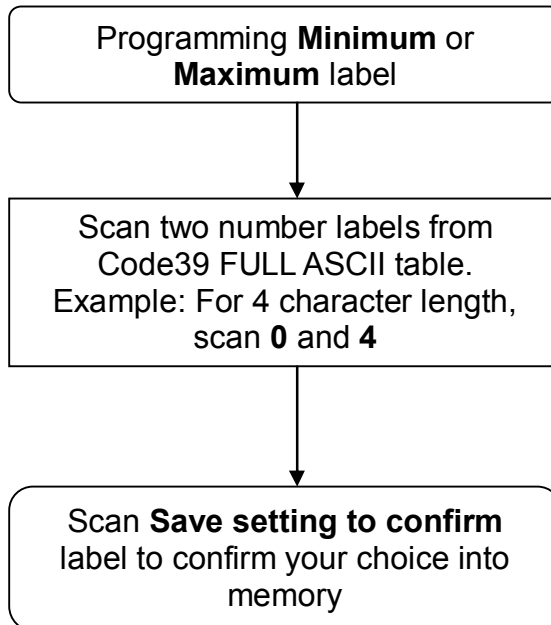
Code 93 check digit calculate and transmit



2. Code 93 code reading length setting

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

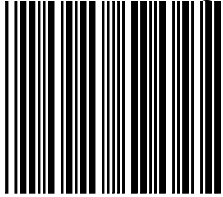
CODE LENGTH SETTING PROCESS



Code 93 maximum length setting

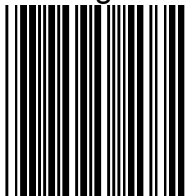


Code 93 minimum length setting



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

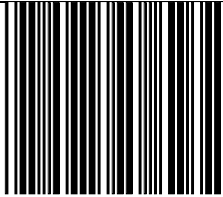
Save setting to confirm



3. Data Redundant Check

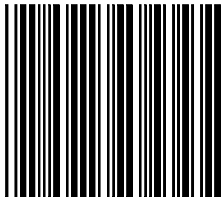
The option allows you to set decoder data redundant check before it is accepted as a good read. A higher data redundant check read setting offers more assurance that a barcode has been read correctly while a lower setting allows faster scanning performance.

Code 93 data redundant check = 0

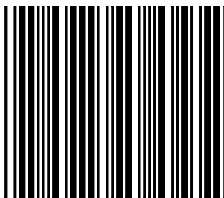


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 93 data redundant check = 1

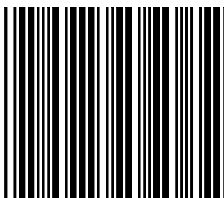


Code 93 data redundant check = 2



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Code 93 data redundant check = 3



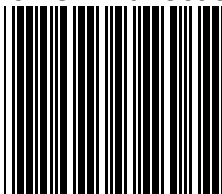
GS1 DATABAR Parameters Setting

NOTE:

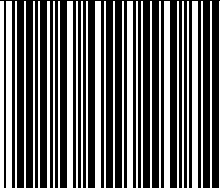
- 1. There are 7 types of barcodes in the GS1 DataBar family and they are categorized into three groups in this programming guide. Barcode types in the same group use the same barcodes for setting
- 2. Before start, contact your distributor to make sure if your model and firmware version support GS1 DataBar.

Group	Representative	Contents
Group 1	GS1 DataBar Omnidirectional (Formally RSS-14)	GS1 DataBar Omnidirectional GS1 DataBar Truncated GS1 DataBar Stacked GS1 DataBar Stacked Omnidirectional
Group 2	GS1 DataBar Limited (Formally RSS Limited)	GS1 DataBar Limited
Group 3	GS1 DataBar Expanded (Formally RSS Expanded)	GS1 DataBar Expanded GS1 DataBar Expanded Stacked

GS1 DataBar Omnidirectional enable

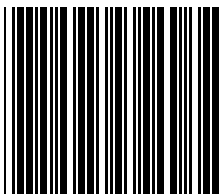


GS1 DataBar Omnidirectional disable

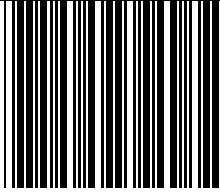


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

GS1 DataBar Limited enable

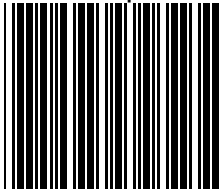


GS1 DataBar Limited disable

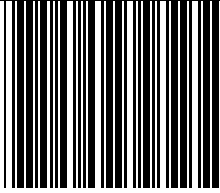


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

GS1 DataBar Expanded enable

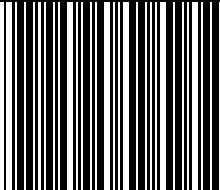


GS1 DataBar Expanded disable

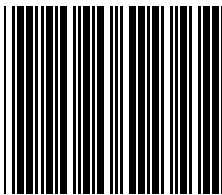


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit GS1 DataBar Omnidirectional check digit

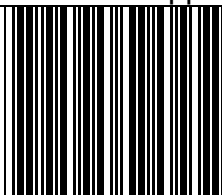


Do not transmit GS1 DataBar Omnidirectional check digit

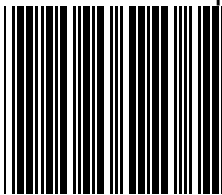


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit GS1 DataBar application ID (01)

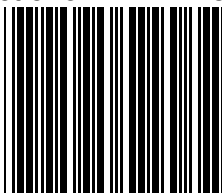


Do not transmit GS1 DataBar application ID (01)

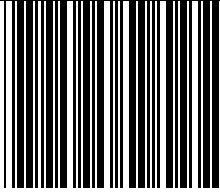


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

GS1 DataBar Omnidirectional/EAN-128 emulation enable (JC1)

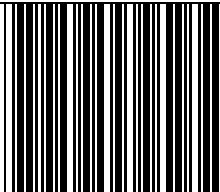


GS1 DataBar Omnidirectional/EAN-128 emulation disable (JC1)

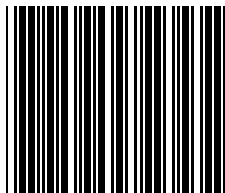


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit GS1 DataBar Limited check digit

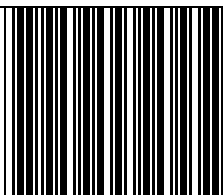


Do not transmit GS1 DataBar Limited check digit

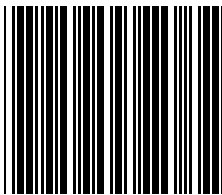


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transmit GS1 DataBar Limited application ID (01)

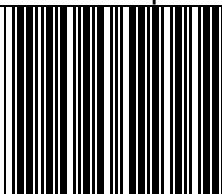


Do not transmit GS1 DataBar Limited application ID (01)

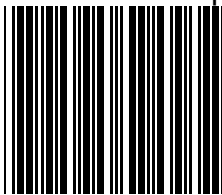


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Transit GS1 DataBar Expanded check digit

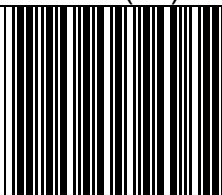


Do not transmit GS1 DataBar Expanded check digit

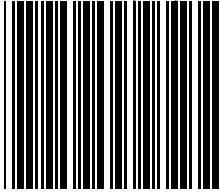


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Enable transmit AI(01) of expanded

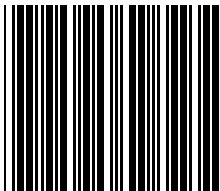


Disable transmit AI(01) of expanded

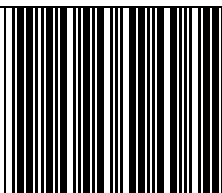


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

GS1 DataBar Expanded/EAN-128 emulation enable (JC1)

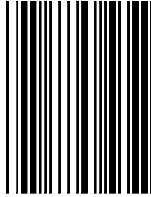


GS1 DataBar Expanded/EAN-128 emulation disable (]C1)



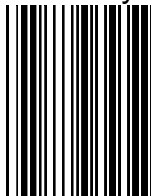
Full ASCII Code Table

Full ASCII --- NUL

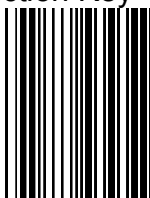


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

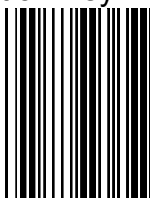


Full ASCII ----STX
(Function Key---Del)

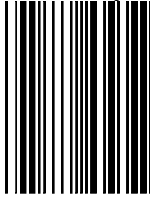


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

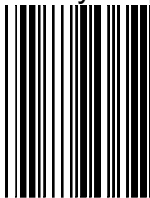


Full ASCII ---- EOT
(Function Key---End)

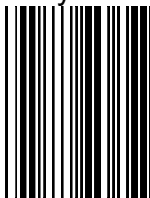


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

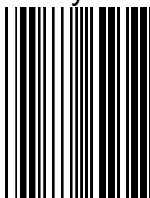


Full ASCII ---- ACK
(Function Key---Down arrow)

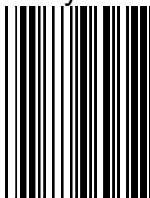


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

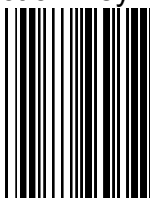


Full ASCII ---- BS
(Function Key---Backspace)

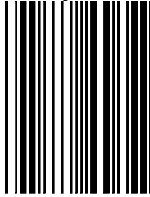


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

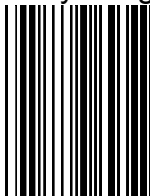


Full ASCII ---- LF
(Function Key---Enter(num))

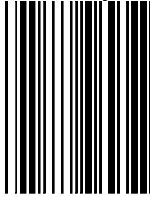


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

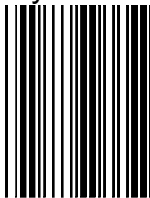


Full ASCII ---- FF
(Function Key---PgUp)

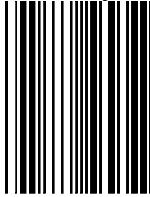


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

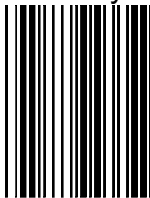


Full ASCII ---- SO
(Function Key---PgDn)

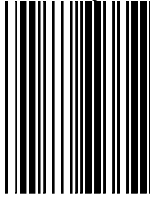


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

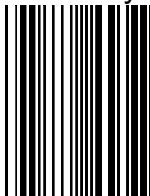


Full ASCII ---- DLE
(Function Key---5(num))

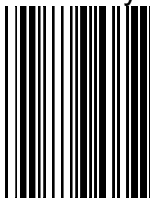


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

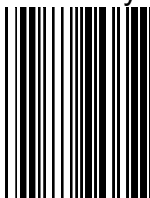


Full ASCII ---- DC2
(Function Key---F2)

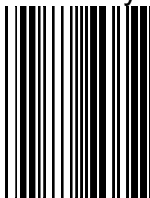


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

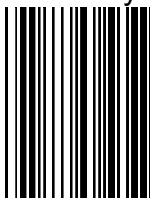


Full ASCII ---- DC4
(Function Key---F4)

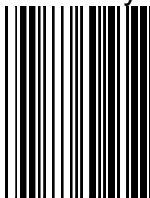


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

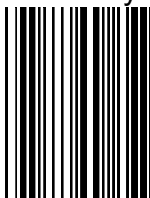


Full ASCII ---- SYN
(Function Key---F6)

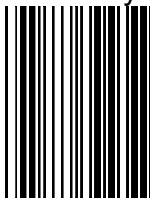


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- ETB
(Function Key---F7)

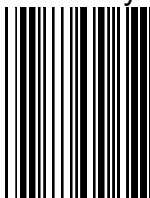


Full ASCII ---- CAN
(Function Key---F8)

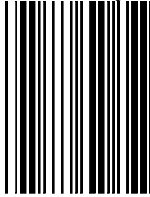


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

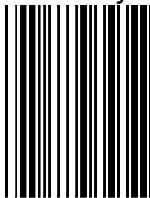


Full ASCII ---- SUB
(Function Key---F10)

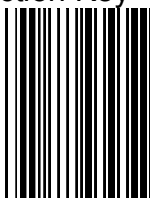


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

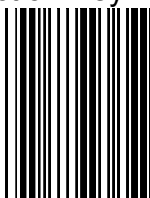


Full ASCII ---- FS
(Function Key---F12)

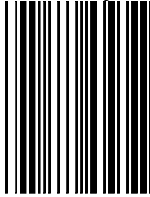


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

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

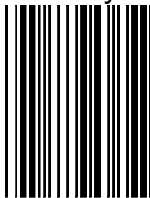


Full ASCII ---- RS
(Function Key---Ctl(L))

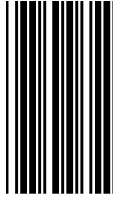


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- US
(Function Key---Alt(L))

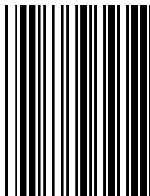


Full ASCII ---- SP

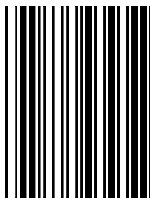


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- !

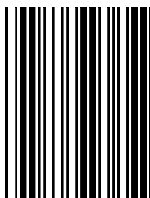


Full ASCII ---- “

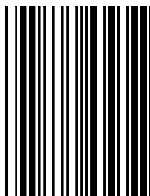


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- #

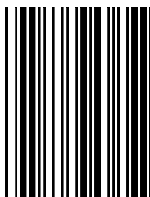


Full ASCII ---- \$

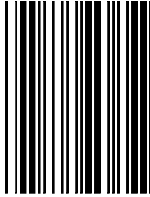


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- %

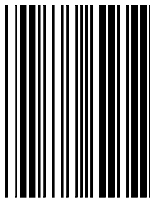


Full ASCII ---- &

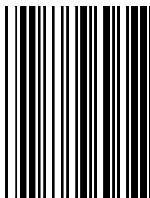


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- ‘

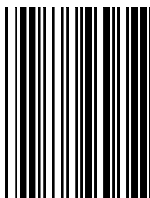


Full ASCII ---- (

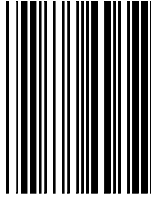


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ----)

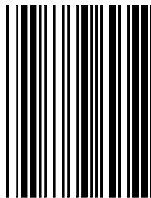


Full ASCII ---- *

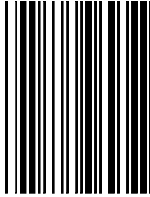


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- +



Full ASCII ---- ,

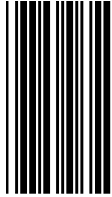


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- -

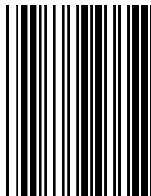


Full ASCII ---- .

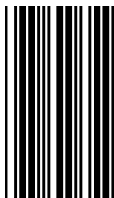


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- /

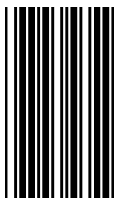


Full ASCII ---- 0

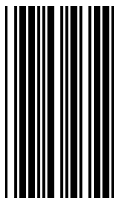


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- 1

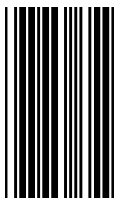


Full ASCII ---- 2

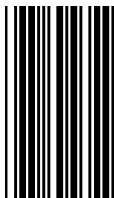


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- 3

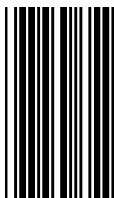


Full ASCII ---- 4

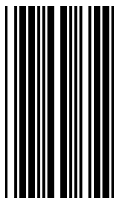


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- 5

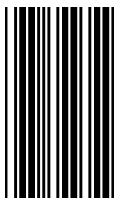


Full ASCII ---- 6

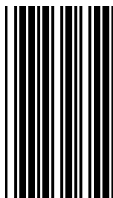


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- 7

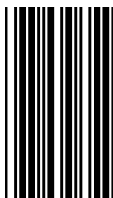


Full ASCII ---- 8

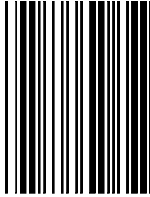


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ----9

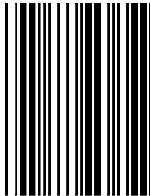


Full ASCII ---- :

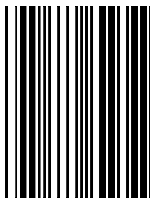


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- ;

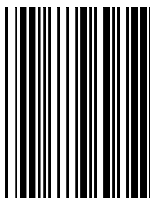


Full ASCII ---- <

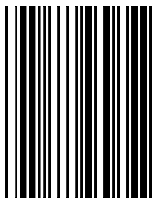


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- =

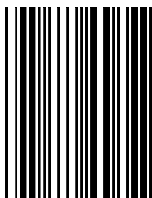


Full ASCII ---- >

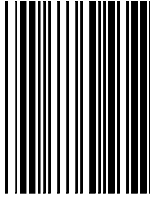


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- ?



Full ASCII ---- @



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- A



Full ASCII ---- B



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- C

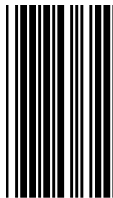


Full ASCII ---- D

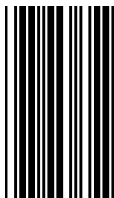


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- E

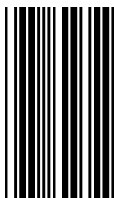


Full ASCII ---- F

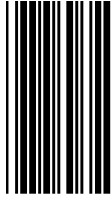


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- G

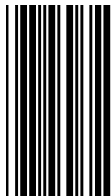


Full ASCII ---- H

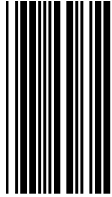


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- I



Full ASCII ---- J



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- K

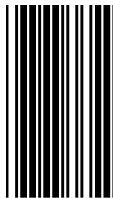


Full ASCII ---- L



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- M



Full ASCII ---- N

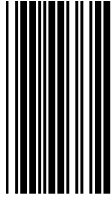


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- O

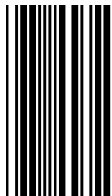


Full ASCII ---- P



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- Q



Full ASCII ---- R

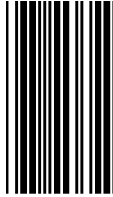


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- S



Full ASCII ---- T



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- U



Full ASCII ---- V



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- W

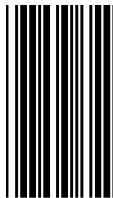


Full ASCII ---- X

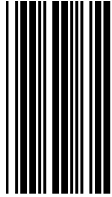


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- Y

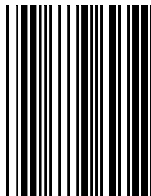


Full ASCII ---- Z

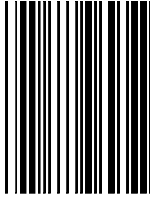


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- [

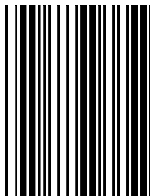


Full ASCII ---- \

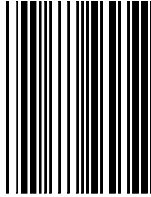


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ----]

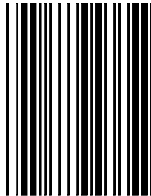


Full ASCII ---- ^

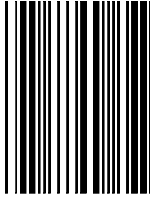


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- _

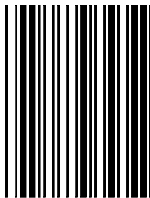


Full ASCII ---- `

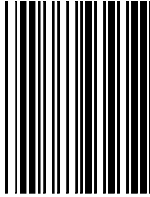


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- a

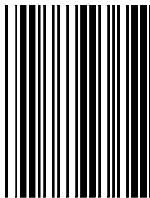


Full ASCII ---- b

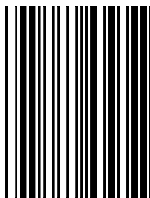


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- c

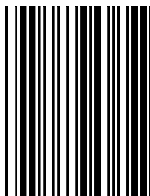


Full ASCII ---- d

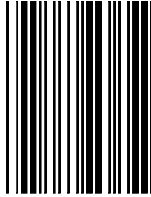


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- e

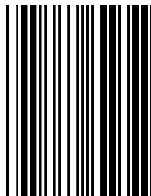


Full ASCII ---- f

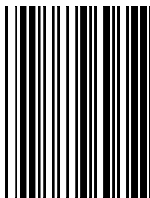


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- g

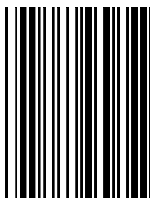


Full ASCII ---- h

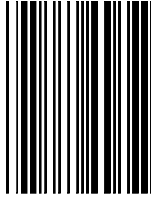


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- i

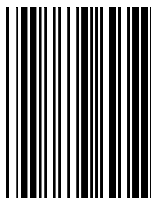


Full ASCII ---- j

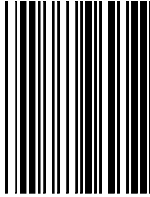


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- k

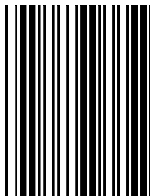


Full ASCII ---- I

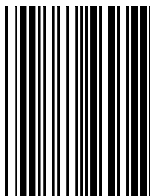


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- m

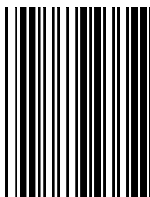


Full ASCII ---- n

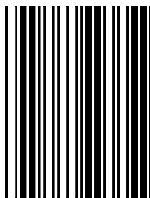


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- o

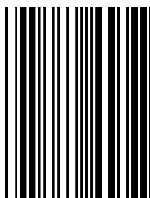


Full ASCII ---- p

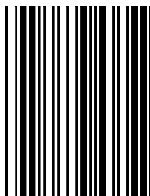


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- q

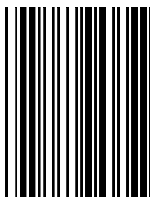


Full ASCII ---- r

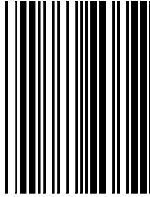


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- s

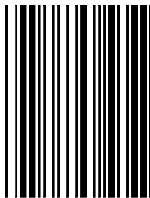


Full ASCII ---- t

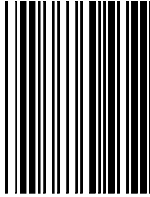


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- u

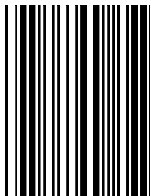


Full ASCII ---- v

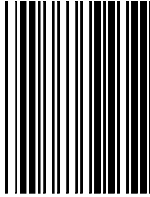


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- w

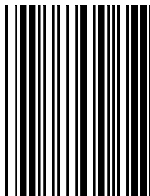


Full ASCII ---- x

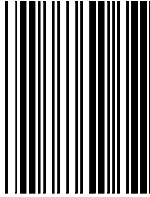


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- y

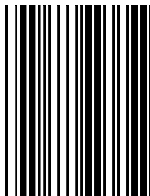


Full ASCII ---- z

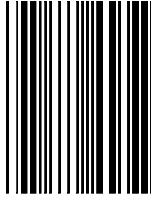


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- {

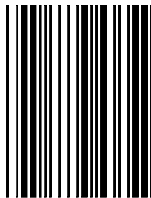


Full ASCII ---- |

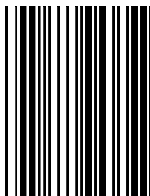


To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- }

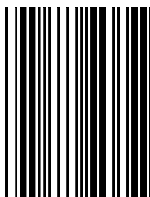


Full ASCII ---- ~



To prevent confusion in code scanning, cover the unwanted label and present the desired barcodes one by one to the scanner.

Full ASCII ---- DEL



APPENDIXES

APPENDIX A

CODE 39 FULL ASCII CODE TABLE

ASCII	CODE 39	VALEUR HEXA.	ASCII	CODE 39	VALEUR HEXA.
NUL	%U	00	%	/E	25
SOH	\$A	01	&	/F	26
STX	\$B	02	'	/G	27
ETX	\$C	03	(	/H	28
EOT	\$D	04	)	/I	29
ENQ	\$E	05	*	/J	2A
ACK	\$F	06	+	/K	2B
BEL	\$G	07	,	/L	2C
BS	\$H	08	-	-	2D
HT	\$I	09	.	.	2E
LF	\$J	0A	/	/	2F
VT	\$K	0B	0	0	30
FF	\$L	0C	1	1	31
CR	\$M	0D	2	2	32
SO	\$N	0E	3	3	33
SI	\$O	0F	4	4	34
DLE	\$P	10	5	5	35
DC1	\$Q	11	6	6	36
DC2	\$R	12	7	7	37
DC3	\$S	13	8	8	38
DC4	\$T	14	9	9	39
NAK	\$U	15	:	/Z	3A
SYN	\$V	16	;	%F	3B
ETB	\$W	17	<	%G	3C
CAN	\$X	18	=	%H	3D
EM	\$Y	19	>	%I	3E
SUB	\$Z	1A	?	%J	3F
ESC	%A	1B	@	%V	40
FS	%B	1C	A	A	41
GS	%C	1D	B	B	42
RS	%D	1E	C	C	43
US	%E	1F	D	D	44
SP	SP	20	E	E	45
!	/A	21	F	F	46
"	/B	22	G	G	47
#	/C	23	H	H	48
\$	/D	24	I	I	49

APPENDIX A

CODE 39 FULL ASCII CODE TABLE

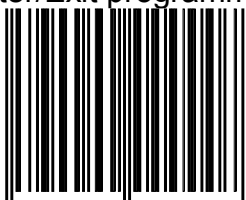
ASCII	CODE 39	VALEUR HEXA.	ASCII	CODE 39	VALEUR HEXA.
J	J	4A	e	+E	65
K	K	4B	f	+F	66
L	L	4C	g	+G	67
M	M	4D	h	+H	68
N	N	4E	i	+I	69
O	O	4F	j	+J	6A
P	P	50	k	+K	6B
Q	Q	51	l	+L	6C
R	R	52	m	+M	6D
S	S	53	n	+N	6E
T	T	54	o	+O	6F
U	U	55	p	+P	70
V	V	56	q	+Q	71
W	W	57	r	+R	72
X	X	58	s	+S	73
Y	Y	59	t	+T	74
Z	Z	5A	u	+U	75
[	%K	5B	v	+V	76
\	%L	5C	w	+W	77
]	%M	5D	x	+X	78
^	%N	5E	y	+Y	79
_	%O	5F	z	+Z	7A
`	%W	60	{	%P	7B
a	+A	61		%Q	7C
b	+B	62	}	%R	7D
c	+C	63	~	%S	7E
d	+D	64	DEL	%T	7F

APPENDIX B

FUNCTION KEY EMULATION

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

Enter/Exit programming



Miniature Dual-Laser Omnidirectional Hands-Free Scanner



User's manual



Revision History

Changes to the original manual are listed below:

Version	Date	Description of Version
1.0	2010/9/01	Initial release

Important Notice

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Printing Guidance

This manual is in A5 size. Please double check your printer setting before printing it out.

Laser Safety

The Miniature Dual-Laser Omnidirectional Hands-free Scanner complies with safety standard IEC 60825 for a Class I laser product. It also complies with CDRH as applicable to a Class IIa laser product. Avoid long term staring into direct laser light.

Radiant Energy: The Miniature Dual-Laser Omnidirectional Hands-free Scanner uses two low-power visible laser diodes operating at 650nm in an opto-mechanical scanner resulting in less than 3.9 μ W radiated power as observed through a 7mm aperture and averaged over 10 seconds.

Do not attempt to remove the protective housing of the scanner, as unscanned laser light with a peak output up to 0.8mW would be accessible inside.

Laser Light Viewing: The scan window is the only aperture through which laser light may be observed from this product. A failure of the scanner motor, while the laser diode continues to emit a laser beam, may cause emission levels to exceed those for safe operation. The scanner has safeguards to prevent this occurrence. If, however, a stationary laser beam is emitted, the failing scanner should be disconnected from its power source immediately.

Adjustments: Do not attempt any adjustments or alteration of this product. Do not remove the protective housing of the scanner. There are no user-serviceable parts inside.

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Optical: The use of optical instruments with this product will increase the eye hazard. Optical instruments include binoculars, magnifying glasses, and microscopes but do not include normal eye glasses worn by the user.

For CE-Countries

This scanner is in conformity with CE standards. Please note that an approved, CE-marked power supply unit should be used in order to maintain CE conformance.

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Introduction

The Miniature Dual-Laser Omnidirectional Hands-Free Scanner is embedded with the latest dual-laser engine and decoding technology. It uses two laser diodes which scan in 10 directions and enable 40 laser lines scanning at a rate of 2,500 scans per second; the proprietary hardware decoding technology further guarantees its utmost scanning performance. It has an auxiliary RS-232 port that supports an additional handheld scanner. Its added value includes multiple interfaces, built-in EAS antenna, and adjustable audio/visual indications.

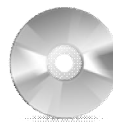
Key Features

- Unique dual-laser technology
- Proprietary hardware decoding technology
- Large scan field
- Small footprint to save counter space
- Auxiliary RS-232 port supporting an additional handheld scanner
- Easy on-site configuration and upgradeability

Unpacking

The omnidirectional scanner package contains:

- 1 ea. Miniature dual-laser omnidirectional hands-free scanner
- 1 ea. Interface cable (This cable is usually, but always, supplied. Model depends on customer needs.)
- 1 ea. 5V power adapter (Adapter enclosed upon customers' requirements. Please refer to the 2.1 Power section to learn more about the use of the external power. Model depends on electrical requirements of your geographic location)
- 1 ea. User's manual & programming guide in CD-ROM



- a. Please leave this user's manual within easy access for persons using the scanner.
- b. If any contents are damaged or missing, please contact your dealer immediately.

Scanner Components

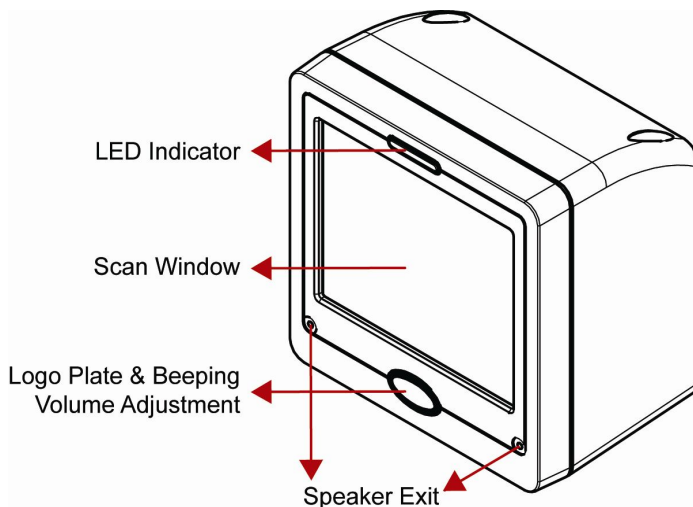


Figure 1: Front View

Description	Function
LED Indicator	Reading status indication
Scan Window	Read barcodes
Logo Plate & Beeping Volume Adjustment	Carry brand name and allow sound indication volume adjustment
Speaker Exit	For beep tone indication

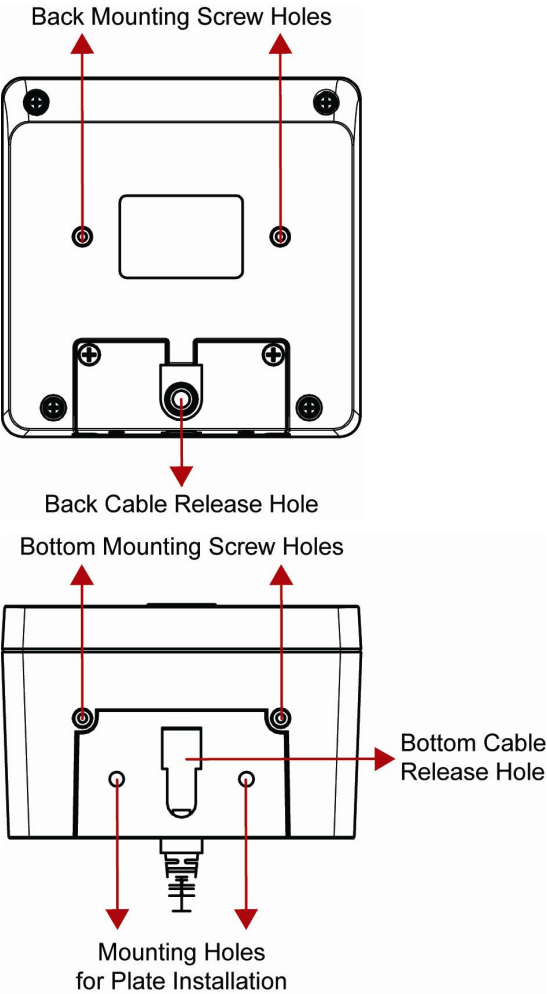


Figure 2: Back View & Bottom View

Description	Function
Back Mounting Screw Holes Bottom Mounting Screw Holes	For permanent fixture of the scanner (optional)
Back Cable Release Hole Bottom Cable Release Hole	Connecting interface cable
Mounting Holes for Plate Installation	For permanent fixture of the mounting plate (optional)

Scanner Labels

There is a label on the device bottom containing information such as model name and serial number. Under the window glass is another caution label about laser safety. Below are examples of the labels on scanner.

Device Label Sample

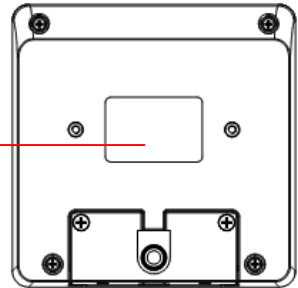


Figure 3: Cable Installation

Caution Label Sample

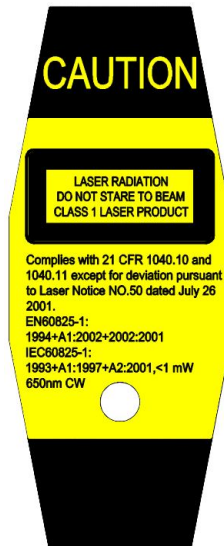


Figure 4: Caution Label

Cable Installation

The scanner is to be connected to a host usually as a hands-free scanner. The use of external power is determined by your host and it is required for RS-232 interface. The scanner also supports an auxiliary scanner and EAS application. The figure below gives you an overview of the cable installation when the device is connected to a POS system.

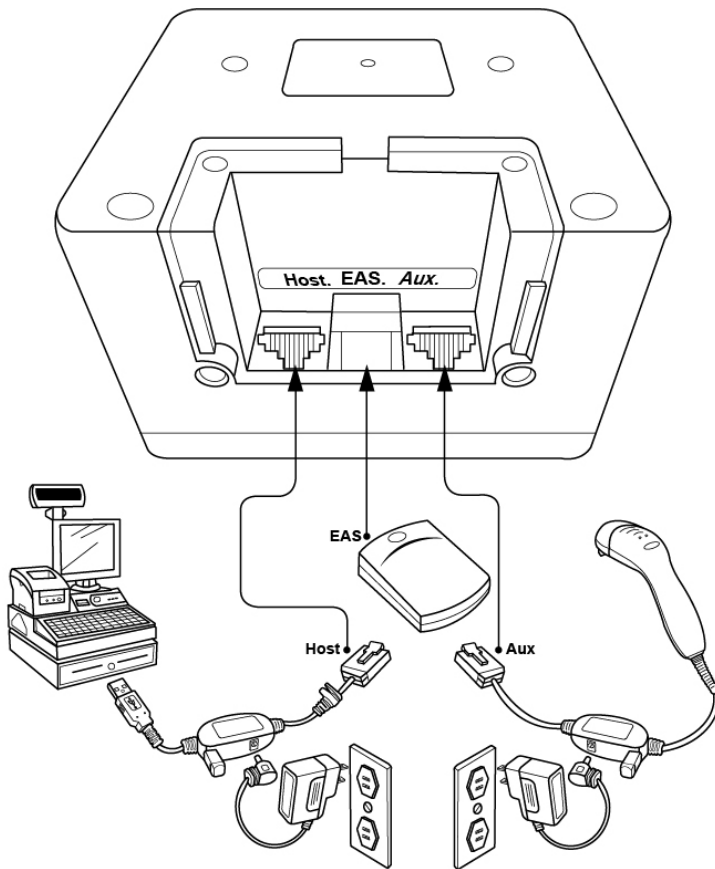


Figure 5: Cable Installation



Before connecting the cables, attach and route them through the back cable release hole or the bottom cable release hole on the mounting plate for proper installation.

Maintaining the Scanner

The scanner is designed for long-term trouble-free operation and rarely requires any maintenance. Only an occasional cleaning of the scanner window is necessary in order to remove dirt and fingerprints. It can be cleaned while the scanner is running.

When cleaning the scan window, wipe the scan window with a soft lint-free cloth and a non-abrasive cleaner to avoid scratching and damaging the scan window. Do not spray water or cleaning liquid directly into the window.

If the scanner's housing needs cleaning, use a mild cleaning agent that does not contain strong oxidizing chemicals; otherwise the exterior may be damaged.

Connection

Power

The scanner requires a minimum of 320mA at 5 V DC power. The interface cable that comes with the scanner supports both direct power (where the scanner takes power from the host machine) and external power (that's what the supplied power adapter is for). A sufficiently robust host system can support a scanner successfully without external power; a host system with a barely adequate power supply may produce erratic performance (either of the host system itself, or of the scanner, or both) when a scanner is attached. Unless you are sure your host system can handle the load, it is recommended that you use the supplied power adapter. In most cases, external power is not required for keyboard and USB interface. When an external adapter is connected, the scanner does not take power from the host.

The scanner turns on when power is supplied, and turns off when power is removed. There is no on/off switch on the scanner itself.

Use only an AC/DC power adapter approved for the scanner. Use of other power supplies may cause damage to the product, and void the factory warranty.

Follow the steps below when you need an external power connection to the scanner (Refer to Figure 5):

1. Connect the interface cable to the bottom of the scanner.
2. Connect the other end of the interface cable to the host (refer to your host manual to locate the correct port).
3. Plug the power supply into the power jack on the interface cable.
4. Plug the other end of the power supply into an AC outlet.

Verifying Scanner Operation

Before mounting your scanner, please follow the procedure below to verify scanning operation.

1. Use a screw driver to release the mounting plate from the device.

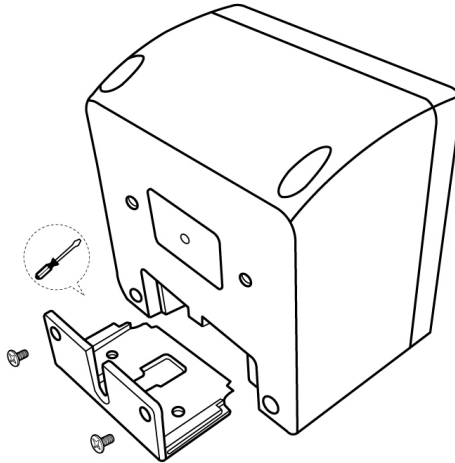


Figure 6: Mounting Plate Removal

2. Insert the 10-pin modular plug of the interface cable into the left connector at the back of the scanner until a firm click is heard.

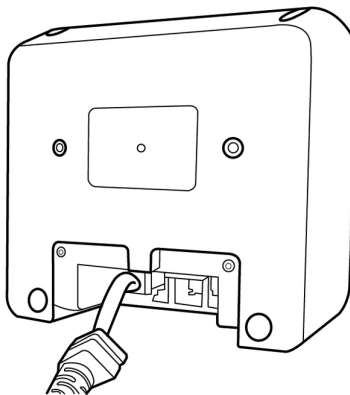


Figure 7: Host Cable Connection

3. Put the mounting plate back (optional).
4. Plug the other end of the cable to the host.
5. If required, plug the power adapter into the jack on the interface cable.
6. Power up the scanner. The speaker sounds four beeps and the LED indicator glows blue.
7. Present a known-good test barcode to the scanner. The scanner should issue a short beep and the LED should flash red momentarily.



If the scanner is connected to a keyboard wedge for this test, it should read one barcode, beep, and the LED remain red. This is normal when the keyboard wedge is not connected to a live host terminal.

The LED would flash red and read no barcode if the scanner is programmed in USB interface but not connected to a host device.

If the scanner does not produce any beeps, or produces the wrong beeps, or the LED is not lit up, remove the power connection and refer to the section of Troubleshooting.

Connecting to the Host

The power link interface cable comes with different host-end connectors, depending on the host. Follow the steps below to connect the interface cable to the host.

1. Make sure that the power of the host system is off.
2. Plug the host end of the interface cable to the appropriate connector on the host system.
3. For those cases where external power is used, plug the external AC power adapter into the jack on the interface cable.
4. Turn on the host system.

Interface Cable Replacement

The interface cable comes with different host-end connectors, and there are 3 standard types of interface connection that this device supports:

- (a) Keyboard wedge
- (b) RS-232 interface
- (c) USB interface (supporting HID USB and virtual COM USB)

The standard interface cable is attached to the scanner with a 10-pin modular connector. When properly seated, the connector is secured in the scanner handle by a flexible retention tab. The cable is designed to be field replaceable. Replacement cables can be obtained from your authorized distributor.

To replace the cable, follow these steps.

1. Switch off the power of the host system. If a power adapter is used, disconnect it from the scanner cable.
2. Disconnect the old scanner cable from the computer system.
3. Use a screw driver to remove the mounting plate from the scanner.
4. Press down the small tab on the connector where the old cable is attached to the scanner and pull out the connector.
5. Insert the 10-pin modular plug of a new interface cable into the "Host" connector at the back of the scanner until it clicks.
6. Insert the connecting cable in the slot of the mounting plate.
7. Mate the scanner and the mounting plate, engaging the tab on the underside. Be careful not to pinch the cable.
8. Plug the new cable into the host.
9. If a power adapter is used, plug the power adapter into the jack on the interface cable.

Auxiliary Handheld Scanner Connection

Auxiliary RS-232 Port

The scanner provides an auxiliary RS-232 port for the use of an additional peripheral device to be connected to the host system via the scanner itself. It is usually used to connect a handheld scanner for items too large to place on the checkstand.

The auxiliary port will support 5VDC devices with a 100mA maximum current. If the auxiliary device exceeds this specification, an external power supply will be required to power the auxiliary device.

Cable pin-out information for the auxiliary port is as following:

Pin	Function
1	Reserved (for factory use)
2	N.C.
3	+5V output, 100mA max.
4	RTS
5	Ground
6	TX
7	RX
8	NC
9	CTS
10	Reserved (for factory use)

Handheld Data Format Requirements

Before installation, the connected handheld scanner must be configured to transmit data format as below.

Baud rate	9600
Data bit	8
Parity	None
Stop bit	1
Handshaking	RTS/CTS
Message terminator	STX/ETX
Code 39 identifier code	M
ITF 2 of 5 identifier code	I
Chinese post code identifier code	H
UPC-A identifier code	A
UPC-E identifier code	E
EAN-13 identifier code	F

EAN-8 identifier code	FF
Codabar identifier code	N
Code 128 identifier code	K
Code 93 identifier code	L
MSI identifier code	P
GS1 CodeBar Omnidirectional identifier code	RS
GS1 CodeBar Limited identifier code	RL
GS1 CodeBar Expanded	RX
Industrial 2 of 5 identifier code	D
Code 11 identifier code	O
Standard 2 of 5 identifier code	S
Matrix 2 of 5 identifier code	G

Installation of an Auxiliary Scanner

Before installation, contact your distributor to make sure the device and firmware version support such a function. Once you're sure about it, follow the steps below to use the auxiliary RS-232C port as a handheld scanner input port:

1. Configure the handheld scanner data format as above table requirements.
2. Turn off the host system.
3. Connect the handheld scanner to the auxiliary port.
4. Connect the external power supply for the auxiliary scanner (if required).
5. Use the programming barcodes to activate the RS-232C auxiliary port of the omnidirectional scanner. (Refer to the separate Programming Guide.)



The auxiliary RS-232 port is disabled by default. You may enable it by using the programming barcodes in the Programming Guide.

Mounting

The scanner has reserved mounting holes for permanent fixture to a surface or integration into your specifically-designed equipment. After the scanner passes its verification test, you may proceed with mounting.

The scanner should be installed in a location away from direct sunlight; high levels of ambient light reduce scanner effectiveness. The air temperature around the scanner must not exceed 40°C (104°F).

Use mounting holes on the bottom and/or back of the scanner to mount the scanner onto the desired position. Scan performance will not be affected by the mounting direction of the scanner. However, if an auxiliary handheld scanner is to be attached, it must be properly connected as part of the mounting process.

The two basic methods of mounting are

- a) with the included mounting plate, and
- b) with a custom bracket (not included in the standard package).

Diagrams for Mounting

The device is reserved with 2 mounting holes at the back, 2 mounting holes at bottom, and 2 mounting holes on the plate. Refer to the figure below for detailed information.

Back View

Unit: mm (inch)

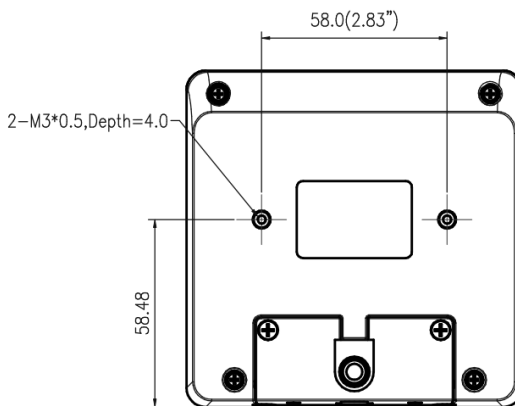


Figure 8: Diagrams for Mounting (Back)

Bottom View

Unit: mm (inch)

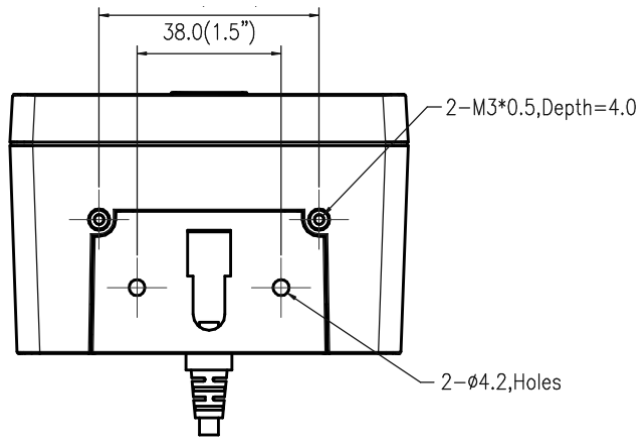


Figure 9: Diagrams for Mounting (Bottom)

Mounting Plate Installation

1. Position the mounting plate in the desired location and secure it in place.

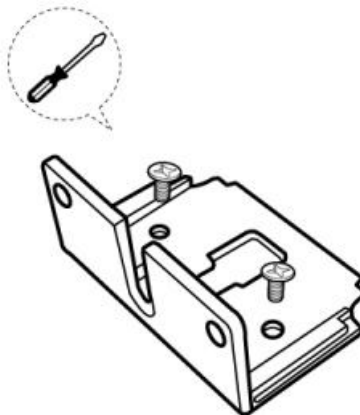


Figure 10: Mounting Hole Positions

2. Insert the 10-pin modular plug of the interface cable into the "Host" connector at the back of the scanner until a firm click is heard.

3. Insert the interface cable in the slot in the mounting plate.

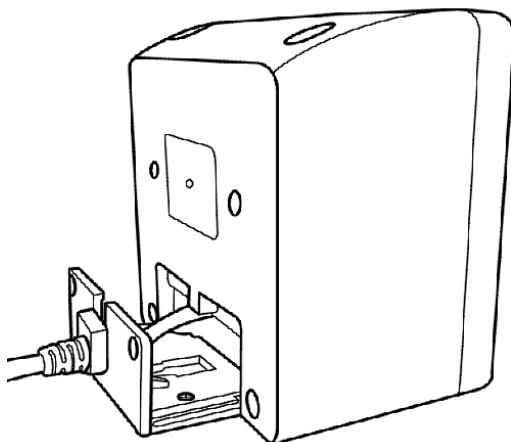


Figure 11: Slide the mounting plate into scanner

4. Move the scanner into position on the mounting plate, engage the tab on the underside, and secure the plate to the scanner with 2 screws.

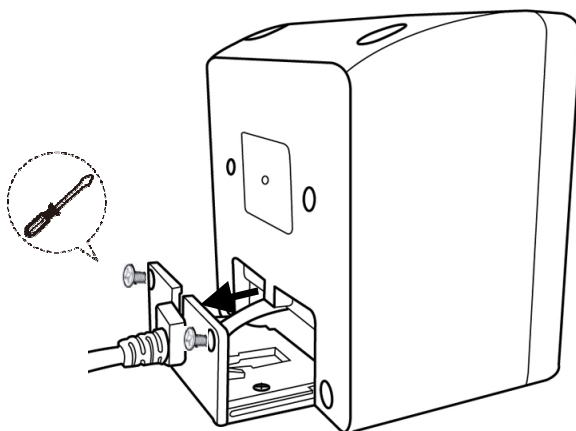


Figure 12: Slide the mounting plate into scanner

Back Mounting

If desired, the scanner can be mounted to your own custom bracket by using the threaded mounting holes on the back (See Figure 2). The mounting holes are threaded to accommodate M3 x 0.5 machine screws to a depth of 4.0 mm.

Make sure your bracket design allows for the exit of the interface cable. The supplied mounting plate protects the interface cable connection, requiring the cable exits from the back or bottom of the unit.

Window Instructions

It is **not** recommended to place an additional exit window in front of this scanner. The addition of the exit window can reduce the working range of the scanner due to signal loss. However, when such a window is required for application, please contact your local agency or manufacturers.

Set Up

Configuring the Scanner

In certain cases no setup is required. The scanner is either pre-programmed to suit the situation, or it automatically detects and is ready to go. In other cases the scanner must be informed about what kind of system it is connected to. This can be done in a few moments using the programming barcodes in the separate Programming Guide.

The programming section may be used to set a number of parameters on the scanner: communication interface type, sleep mode timing, same-code delay time, barcode symbologies, and more advanced settings like setting headers and trailers.

The settings are to be stored in non-volatile memory and are preserved even when the scanner is powered down. Individual parameters may be set at any time without affecting the other parameters.

Power-Up Self-Test

The scanner would automatically run the self-test when the power is supplied. It is to verify that the scanner and interface are functioning properly and takes only seconds. The unit would give four beeps in series to indicate that the scanner passed self-test; blue LED would light on afterwards. If the scanner fails the self-test, both the blue and red LED would light on (appearing the color purple); a continuous beeping may also be heard.

Scan Test

Follow the steps below to ensure that your scanner can work well with your host system.

1. With the scanner running (blue LED lights) and the host system on, try to scan several known-good barcodes.
2. Check the results on the host screen. If the scanner is reading okay, it is likely that no further setup is necessary.
3. If the host screen does not show the expected scans, go to the Parameter Setting section below.

Parameter Setting

1. When the scanner is powered on (blue LED lights), find the <Enter/Exit Programming Mode> barcode in the Programming Guide and present this barcode to the scanner. When the scanner gives two beeps (one low and one high) and the LED turns red, it means the scanner is in programming mode.
2. Decide which parameters are required and find their barcodes in the Programming Guide.
3. Cover unwanted codes with your hand and present the desired codes one by one to the scanner; the scanner beeps once as it accepts each code.
4. When done, again present the <Enter/Exit Programming Mode> barcode.
5. The scanner beeps twice of the same tone, and the LED returns to blue. It means the scanner has been programmed.
6. Test again with known-good barcodes. If results are good, you are done setting up. Otherwise, return to step 1 and try again.

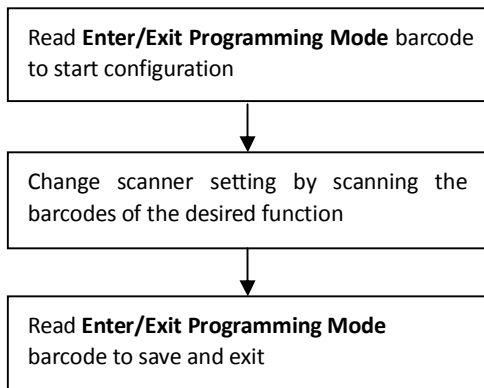


Figure 13: Programming Procedure

Controlling the Scanner from POS System

The scanner can be controlled from the POS system via RS-232C interface. Controlling can be accomplished by transmitting the following single byte commands to the scanner. The default settings of the commands are as follows:

ASCII Code	Function	Byte is Also Called:
0E Hex	enable (resumes disable)	Shift Out or <Ctrl-N>
0F Hex	disable	Shift In or <Ctrl-O>
05 Hex	power-up re-initialization	ENQ or <Ctrl-E>
12 Hex	sleep	DC2 <Ctrl-R>
14 Hex	wake up (resumes sleep)	DC4 <Ctrl-T>



When the scanner is disabled, the motor of the scanner will stay on until the scanner goes into sleep mode.

Operation

LED Indications

There are red and blue dual color LED indications on the head of the device indicating the operational status of the scanner.

LED Status	Indication
LED off	No power supplied to the scanner.
Steady blue light	The scanner is powered on and ready to scan.
One red flash	A barcode has been successfully decoded.
Steady red light	A barcode has been successfully decoded, but the object is not removed from the scan window.
	The scanner is in programming mode.
Flashing blue light	The scanner is in sleep mode.
Steady red/blue light	This indicates the scanner has a motor or laser failure. For motor failure, a periodic beep is sounded. In this case, return the unit for repair.
Flashing red light	The scanner is programmed in USB interface but not connected to a host device.

Sound Indications

The device uses a speaker to give audible feedback on scanner operation. The following are the sound indications.

Beeps	Indication
One beep	A barcode has been successfully decoded.
Two beeps: low-high	The scanner has entered programming mode.
Two beeps: same tone	Scanner has returned from programming to normal mode.
Four beeps in series	This indicates the scanner passed self-test when powered on and is operating properly.
Continuous tone	This is a failure indication. Return the unit for repair.

Beeping Volume Adjustment

The scanner can be programmed with the Programming Guide to change beeper tone, volume and duration; the volume can also be changed by using the logo plate in the front as indicated in the below figure. To change the volume, gently touch the plate and the scanner would cycle to its next level. Repeat touching it till the desired level is reached.



Figure 14: Beeping Volume Adjustment



The volume setting you set using the logo plate is saved in volatile memory. That means the change will be lost when the scanner powers down. On next power-up the scanner would reset to the configured setting. If you wish to save the volume setting permanently, use the Programming Guide to make the changes.

Sleep Mode

After the scanner has been inactive for a specific length of time, the laser and the motor would automatically turn off and the scanner would enter the sleep mode. The blue LED would blink as indication.

It takes 2 steps to enter the sleep mode. The first step is the laser switching off after 10 minutes; the second step is the motor switching off after 30 minutes. The time period is programmable. Please see the Sleep Mode section on the Programming Guide for more details.

To wake up the scanner, simply place an item in front of the motion detecting area and move back and forth or left and right. You can also press the logo plate to wake up the scanner.

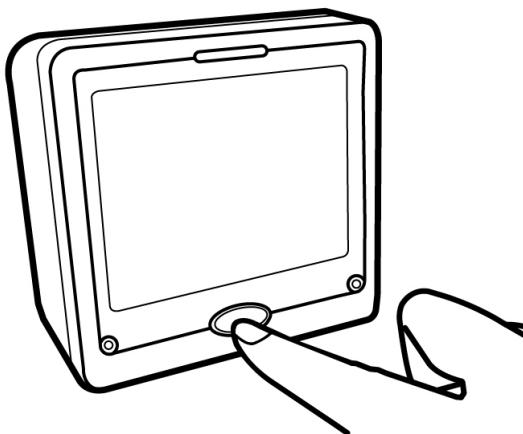


Figure 15 Press the Logo Plate to wake up the scanner

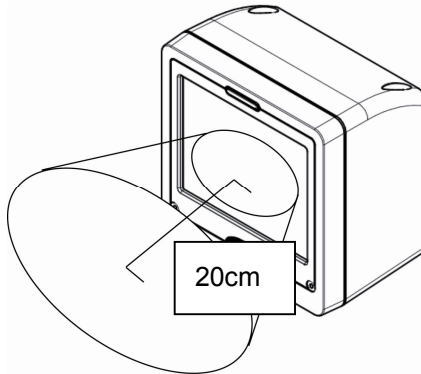


The scanner includes a motion detector that detects activity in front of the scan window. The detecting distance is about 10cm (3.9 inch) from the scan window while in condition with effectiveness of environment lights. The detecting distance is also programmable.

How to Scan

Scan Volume

The device is an omnidirectional presentation scanner with a 10 directional scan field with a 40 lines scan pattern. The scan volume extends approximately 20cm (8") in front of the scan window. Barcode labels can be easily read when presented towards the scanning window.



Scanning Mode

The scanner can read barcodes in either sweep or presentation mode to accommodate different requirements.

Sweep Mode means moving items through the scan volume. Left to right or right to left are both okay. Sweep Mode is usually used for high throughput and reduced product handling.

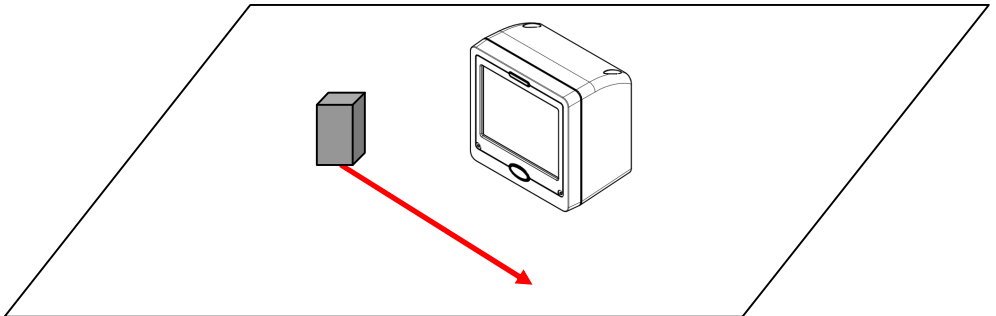


Figure 16: Sweep Mode

Presentation Mode is used where counter top space is at a premium. The product is moved toward the scan window ("presented") until the barcode is read, then the product is removed.

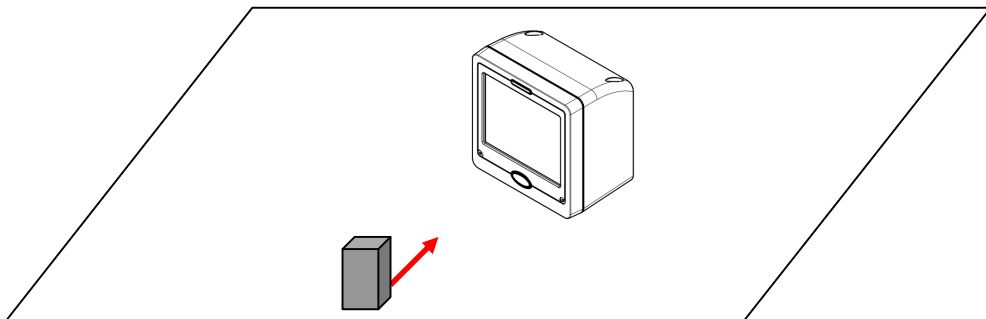


Figure 17: Presentation Mode



To ensure proper reading, please position the items at a distance where the scan pattern covers the entire barcode.

Trouble Shooting

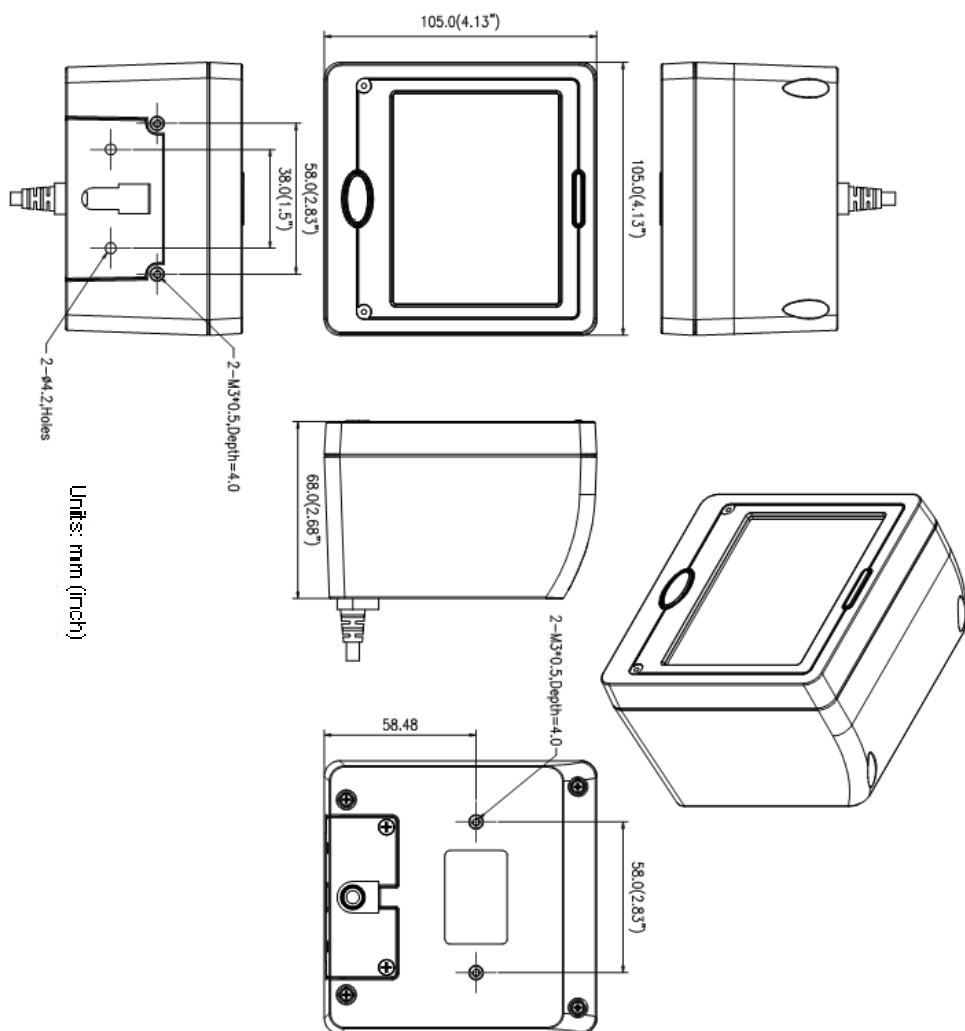
This section contains information about how to solve problems that you may encounter when operating the scanner. However, before referring to the tips, make sure that the scanner is installed as instructed in this manual and that all cables are properly connected. If the problem remains, please contact your dealer.

Problem	Diagnostic Tips
The scanner is on but cannot read barcodes. The LED is red.	● The scanner window is dirty. Clean the scanner window as described in the Maintenance section. ● The presented barcode type is not enabled. Select the barcode type in the Programming Guide. ● The host disables the scanner. ● The barcode type you presented to the scanner is not supported.
The scanner is on, but the motor is not rotating. A barcode cannot be read. The LED is intermittently flashing blue.	● The scanner has entered the sleep mode. Refer to the Sleep Mode section to learn how to wake up the scanner (or use the wake protocol.)
The LED remains red and blue.	● Possible failure of the scanning safeguard circuit. Disconnect the scanner from its power source immediately and contact your dealer.
The scanner does not accept more than two or three barcode labels.	● There is no proper handshaking with the POS system. Switch on the POS system and check the connection and communication settings. ● The scanner is continuously seeing a barcode. Remove all barcode labels out of the scan volume of the scanner and try again. ● The scanner cannot send the data to the POS system. There is no proper handshaking between the scanner and the host. Make sure that all cables are connected and your POS system is ready to receive data.
A barcode is read by the scanner but not accepted by the POS system.	● The interface cable is not connected to the correct port of your POS system. Refer to the manual of your POS system to locate the serial port. ● The communication settings of the system and scanner do not match. Adjust the settings in order to be equal for both devices. ● The interface cable does not suit your POS system. Contact your dealer for the correct interface cable. ● The software running on the POS system does not support the data format of the barcode label.

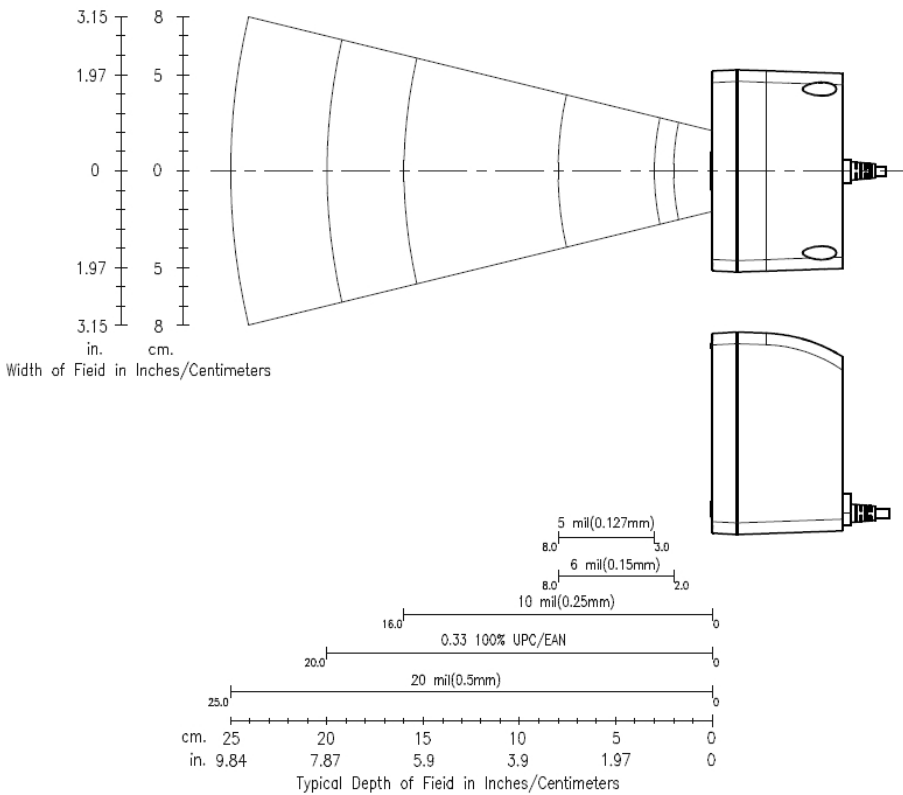
Specification

Operational	
Light Source	650nm visible laser diodes (VLD)
MPU	32 bit
Depth of Scan Field	0 – 200 mm (UPC/EAN 100%, PCS=90%)
Scan Pattern	10 directions of scan field
Scan Rate	2500 scans per second (omnidirectional)
Number of Scan Lines	40
Minimum Bar Width	5mil @ PCS 90%
Print Contrast	30% @ UPC/EAN 100%
Indicators (LED)	Two-color LED (blue & red)
Beeper Operation	Programmable tone & volume
System Interfaces	Keyboard wedge, RS-232C, HID USB, USB virtual COM
Physical	
Height	104 mm
Depth	70 mm
Width	104 mm
Weight	320 g (without cable)
Mounting Option	Integral mounting plate
Cable	Standard 2.0M straight
Power	
Input Voltage	5VDC $\pm$ 10%
Power	1.6 watts
Operating Current	320mA @ 5V (Normal)
Regulatory	
Laser Class	CDRH Class IIa; IEC 60825-1 Class 1
EMC	CE EN55022 B, FCC Part 15 Class B, VCCI, BSMI
Environmental	
Operating Temperature	0°C - 40°C (32°F - 104°F)
Storage Temperature	-20°C - 60°C (-4°C - 140°F)
Humidity	5% ~ 90% RH (no dewing allowed)
Drop Durability	Designed to withstand 1.0M drops
Light Levels	Up to 4000 Lux (fluorescence)
Compatibility	EAS compatible

Dimension

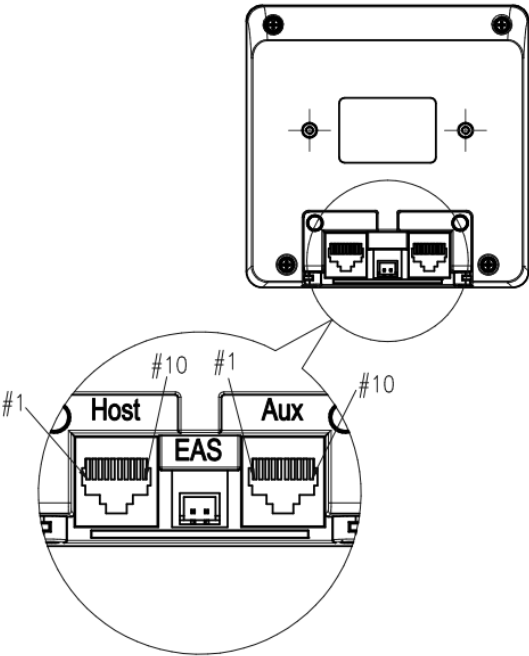


Decode Zone



Pin Assignment

Device



Host Port

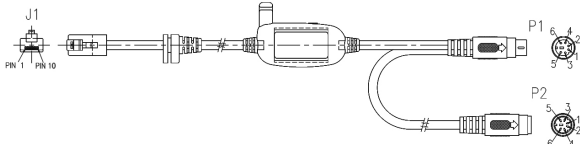
Pin	Host Function		
	Keyboard Wedge	RS-232C	USB
1	N.C.	N.C.	USB Power
2	+5V		
3	KB_CLK		D-
4	PC_CLK	RTS	N.C.
5	Ground		
6	N.C.	TX	N.C.
7	N.C.	RX	N.C.
8	KB_DATA		D+
9	PC_DATA	CTS	N.C.

Auxiliary Port

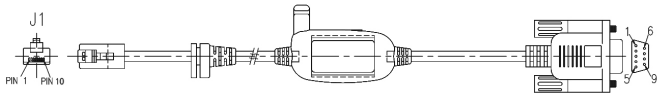
RS-232 IN Only	
Pin	Function
1	Reserved (for factory use)
2	N.C.
3	+5V output, 100mA max.
4	RTS_R
5	Ground
6	TX_R
7	RX_R
8	NC
9	CTS_R
10	Reserved (for factory use)

Interface Cable

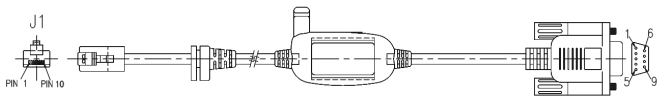
Keyboard Wedge Cable (for PS/2)

	PIN-OUT CONFIGURATION			
	P1- MINI DIN (M)		P2- MINI DIN (F)	
	Din	FUNCTION	Din	FUNCTION
	1	PC Data	1	KB Data
	2	N.C.	2	N.C.
	3	GND	3	GND
	4	+5V	4	+5V
	5	PC Clock	5	KB Clock
	6	N.C.	6	N.C.

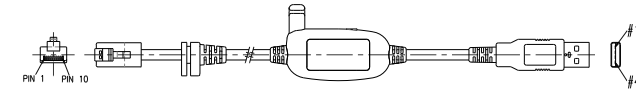
RS-232C Cable – DTE Pin Out

	DB-9 (F)	FUNCTION
	2	TX
	3	RX
	7	CTS
	8	RTS
	9	+5V
	5	GND

RS-232C Cable – DCE Pin Out

	DB-9 (F)	FUNCTION
	2	RX
	3	TX
	7	RTS
	8	CTS
	9	+5V
	5	GND

USB HID / Virtual COM Cable

	USB TYPE A	FUNCTION
	1.	VCC
	2.	D-
	3.	D+
	4.	GND