User's manual

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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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1. Instruction

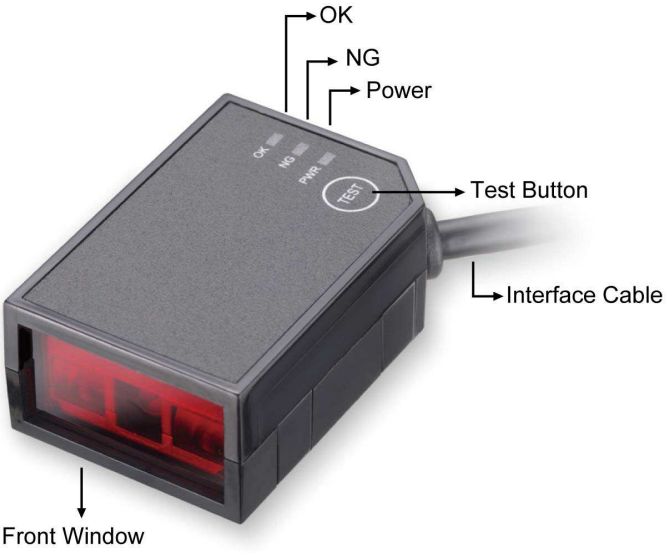
This miniature CCD scan module is especially designed for embedded scanning solution. It only weights 15 grams and sized as small as a match box. There are 3 LED indicators on top allowing immediate scanning response and a test button for performance test. There are mounting holes on the back of the case reserved for quick and easy installation.

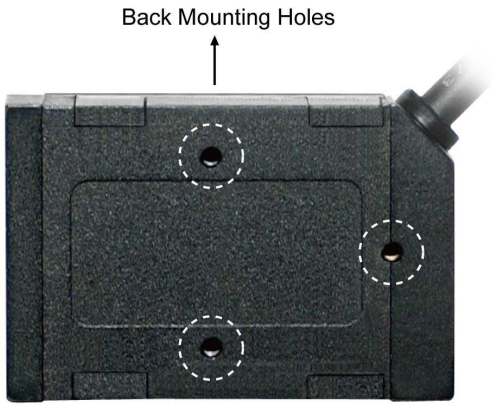
The module has a newly designed CCD scan engine with light beam bright and clear as laser beam that gives user best visual indication and its powerful high resolution CCD acts in outstanding performance.

The scanner includes key features as,

- World's smallest CCD scan module
- Industrial standard design
- A "TEST" button on top for performance testing
- Mounting holes at bottom for easy installation
- Great CCD scanning performance and have future upgradeability on firmware
- Best for embedded applications, kiosks, lottery machine, and others where space is limited.

2. Outline


OK
NG
Power
OK
NG
PWR
TEST
Test Button
Interface Cable
Front Window


Back Mounting Holes

3. Mounting

The scanner is designed to embed into any space limited devices, and it has 3 screwed mounting holes reserved at the bottom.

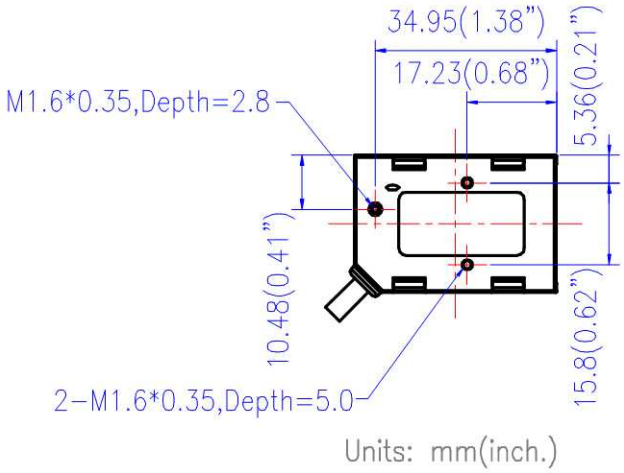


Figure 1: Screw Position

To ensure the scanner reaches its best performance, the following points need to be noticed when mounting the scanner:

(a) Do not place the scanner under direct sunlight or any other bright light source illuminating.

(b) When placing the barcode label, one must be careful not to over tilt, skew and/or pitch the barcode (Refer to figure 2)

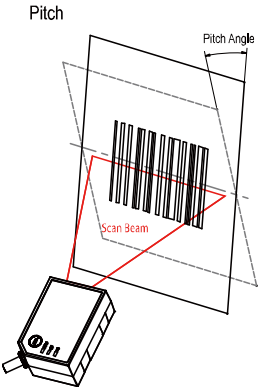
(c) Do not place the device at specula reflection position. The LED light of the scanner reflects directly back on the scanner if it is placed at specula reflection position. As to the nature of CCD sensor, it will not be able to read any barcodes.

(d) The barcode label must be placed within the effective depth of field (D.O.F.) since it is the effective reading distance for the barcode from the scanner. For the best placing position, please refer to the Decode Depth of Field drawing. (Figure 3)

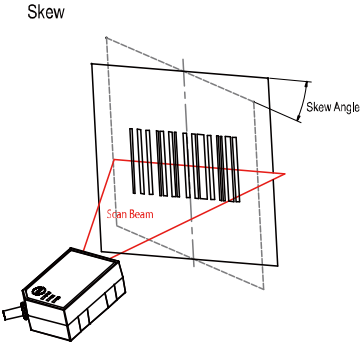
	Different quality and density of a barcode could effect its decode depth of field. Usually when a barcode has poor printing quality or high density, the depth of field would be shorter. It is highly suggested **not** place the barcode label at the extremes of depth of field as it is often easy to move out from the reading range.

	Test condition: using a 100% EAN 13 barcode, 0.33mm (13 mil), at a distance of 14cm (5.5”) in optimal lighting conditions.

Pitch Angle: ±65° normal
Specular Reflection: ±5°



Skew Angle: ±65° normal



Roll Angle: ±20° normal
(Prevents reading of a barcode if all the bars are not inside the reading beam or if tilt is more than 20°.)

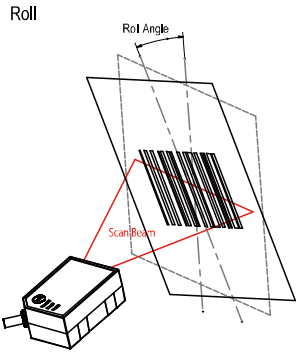


Figure 2: Skew, Pitch and Roll Angle Illustration

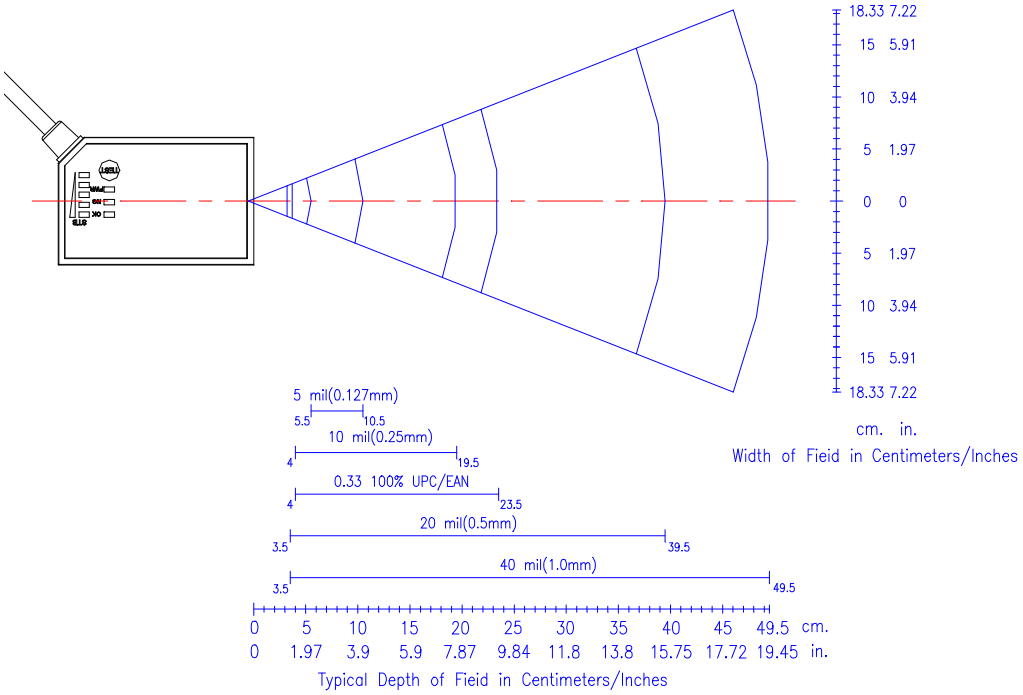
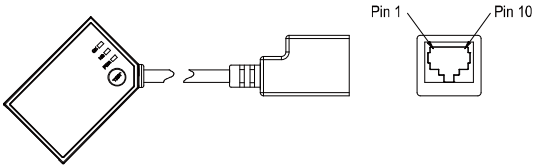


Figure 3: Decode Depth of Field

4. Connection

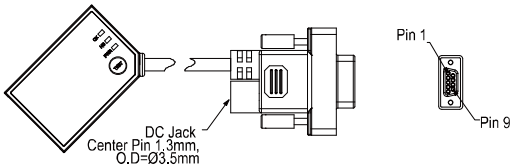
The scan module has 3 different kinds of interface connection to suit customer's desire; the standard cable is black, straight and 2 m (6.5 feet) in length. Below shows the connector types and pin out configuration for each interface.

(a) Free interface – RS-45 10P10C for multi-interface connection



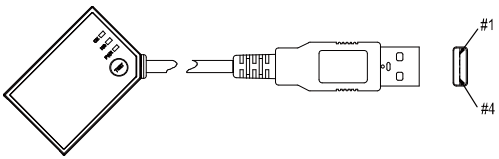
Pin #	Function
1	RTS_EIA
2	USB_D+
3	USB_D-
4	GND
5	CTS_EIA
6	RX_EIA
7	Trigger_In
8	+5V Input
9	N.C.
10	TX_EIA

(b) RS-232 interface – Power adapter required if host can not provide sufficient power.



Pin #	Function
1	N.C.
2	TX_EIA
3	RX_EIA
4	N.C.
5	GND
6	N.C.
7	CTS_EIA
8	RTS_EIA
9	+5V Input
Inner of DC-Jack: +5V DC Outer of DC-Jack: GND	

(c) USB interface connection



Pin #	Function
1	N.C.
2	TX_EIA
3	RX_EIA
4	N.C.

5. TEST Button Function

On top of the scan module, there is a “TEST” button, and it controls two function modes:

5-1 Trigger mode
5-2 Scan performance test mode

The “TEST” button can be set to function as complex mode or only single mode using the set-up barcodes below:


Start of Configuration

Scan this barcode to enter set-up process.


Complex modes

Scan this barcode to set-up the TEST button to control both trigger mode and scan performance test mode.


When the scanner is set in this mode, briskly and continuously press down TEST button twice to activate scan performance test function.


Scan performance test mode

Scan this barcode and the TEST button only functions as scan performance test mode.


When the scanner is set in this mode, continuously press down TEST button over 2 seconds to activate scan performance test function.


Trigger mode

Scan this barcode and the TEST button only functions as a trigger.


End of Configuration

Scan this barcode to save the change and exit from set-up.

5-1 Trigger Mode

In trigger mode, simply aim the scan module at the barcode and press the TEST button to trigger scan light beam and decode.

5-2 Scan Performance Test Mode

To enter into scan performance test mode, briskly and continuously press down the TEST button twice, and all LED indicators are off with two short beep sound simultaneously. The module successfully enters into the mode, and places a barcode label within its scanning range to get the best scan performance result.

The result is indicated with LED lights with different read rate as below:

Read Rate %	**50%**	**75%**	**90%**
OK_LED	On	On	On
NG_LED	x	On	On
PWR_LED	x	x	On

Press the TEST button once; it exits from the scan performance test mode and return to normal operation.

6. Sleep Mode

After the scanner has been inactive for a period of time, the laser would automatically turn off and the red status LED would blink. To wake up the scanner, simply present an object close to the scanner window or press the test button. The Sleep Mode feature is included to reduce power consumption and to extend scanner life.

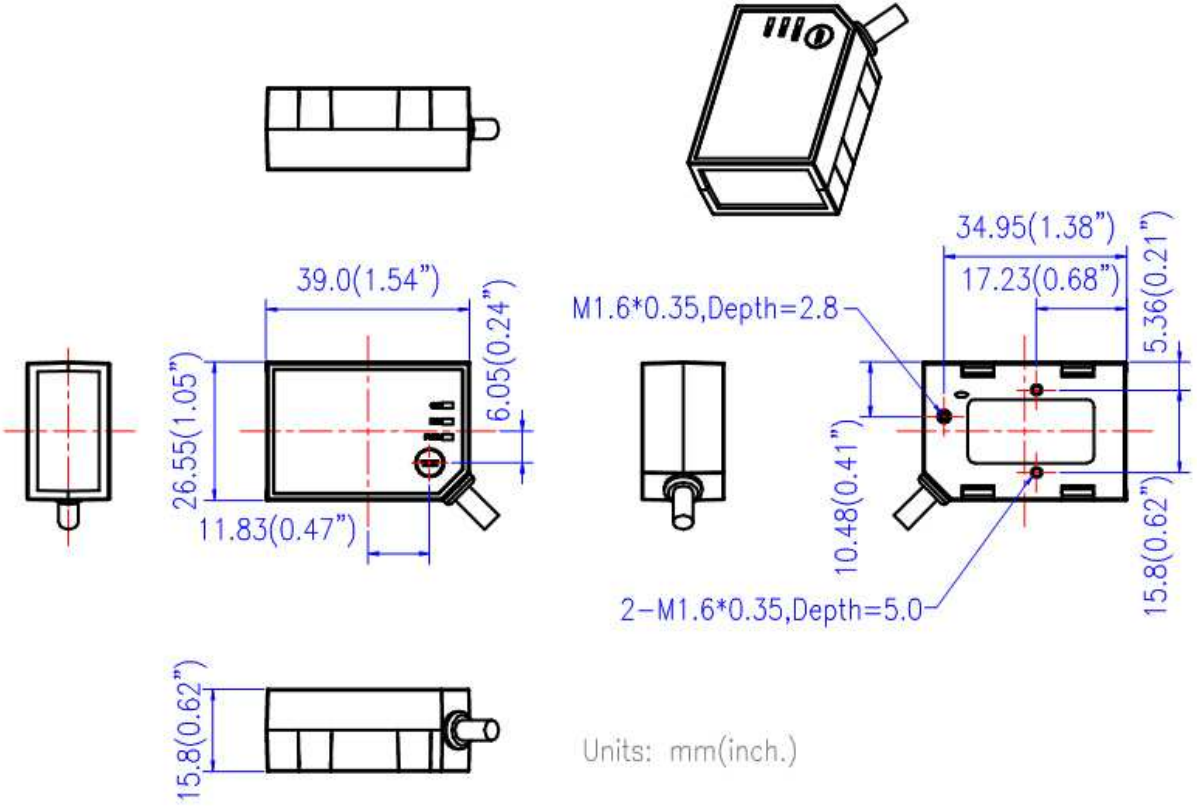
7. Technical Specification

Power Requirement	
Input voltage	5V ±5% VDC
LED on	87mA typical
LED off	37mA typical
Decode	120mA typical 150mA @ 100msec Max. 250mA @ 1msec peak
Operational	
Sensor	2,500 pixels CCD
Illumination	617nm visible red LED
Depth of field	40 – 235mm (UPC/EAN 100%, PCS=90%)
Scan rate	200 scans per second
Minimum bar width	0.125mm (5mil) (0.1mm actually) (Code 39, PCS=90%, contact)
Print contrast	30% @ UPC/EAN 100%
Indicators (LED)	“OK”, “NG”, “PWR” and “TEST”
Beeper operation	Programmable tone & beep time
Scan angle	43°
Pitch angle	±65°
Skew angle	±65°
Specular reflection angle	±5°
System interface	RS-232C, HID USB, and USB-Virtual COM port emulation
Environment	
Operating temperature	0℃ ~ 50℃ (32℉ ~ 122℉)
Storage temperature	-20℃ ~ 60℃ (-4℉ ~ 140℉)
Humidity	5% to 95% non-condensing
Ambient light immunity	7,000 Lux max. (fluorescence)
Shock	2,000G
Vibration	Unpowered engine withstands a random vibration along each of the X, Y and Z axis for a period of 10 min. per axis, defined as follows: ● 20~80Hz ramp up to 0.04G^2/Hz at the rate of 3dB/oct. ● 80~350Hz 0.04G^2/Hz ● 350~2000Hz ramp down at the rate of 3dB/oct.

~Technical Specification Continued~

Physical dimension	
Height	15.8mm (0.62”)
Width	26.6mm (1.05”)
Depth	39.0mm (1.54”)
Weight	15g
Mounting	3-M1.6 * 0.35 screw hole
Regulatory	
Regulator approval	According CE, FCC, VCCI, RoHS compliant
Decode symbology	UPC/JAN/EAN, Code 39, Code 93, Codabar, Interleave 2 of 5, IATA, Standard 2 of 5, ISBN/ISSN, Chinese post code, MSI/Plessy, EAN 128, Code 128

8. Dimension


39.0(1.54")
6.05(0.24")
26.55(1.05")
11.83(0.47")
15.8(0.62")
34.95(1.38")
17.23(0.68")
M1.6*0.35,Depth=2.8
5.36(0.21")
10.48(0.41")
15.8(0.62")
2-M1.6*0.35,Depth=5.0
Units: mm(inch.)

9. 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.

Wipe the scan window with a soft lint-free cloth and a non-abrasive cleaner to avoid scratching and damaging the scan window. The scan window may be cleaned while the scanner is running.

Scratching the scanner window can reduce the scanning performance. We suggest you either recess the window into the housing or apply a hard-coat on window.

10. Programming Guide

Scanning a series of programming bar code labels can configure the scanner. This allows decoding options and interface protocols to be tailored to a specific application. The configuration is stored in non-volatile memory and will not be lost by removing power from the scanner.

The scanner must be properly powered before programming. For RS-232C type scanners, an external power adapter might be necessary to supply DC power to the scanner.

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

Table 1 gives the default settings of all the programmable parameters. The default settings will be restored whenever the "Reset" programming label is scanned.

Table 1: Factory Default Settings

Scanner Timing	Default
Same code delay	500msec
Scan mode	Auto scan
RS-232 communication	**Default**
Baud rate	9600
Parity	none
Data bits	8
Stop bit	1
RTS/CTS	off
Terminator	<CR><LF>
USB Communication	**Default**
Terminator type	Enter
Code mode	Scan code
Decoder Selection	**Default**
EAN/UPC	Enable
CODE 39	Enable
Code 32	Disable
CODABAR	Enable
ITF 2 OF 5	Enable
MSI/Plessy	Disable
Chinese post code	Disable
Code 93	Enable
Code 128	Enable
EAN-128	Disable
Standard 2 of 5	Disable
NEC 2 of 5	Disable
Beeper sound	**Default**
Frequency	High
Duration	100msec
Code Identifiers	**Default**
Code ID	Off
Code 39 identifier	M
ITF 2 of 5 identifier	I
Chinese post code identifier code	H
UPC-A identifier code	A
UPC-E identifier code	E
EAN-13 identifier code	F

Table 1: Factory Default Settings (Continued)

EAN-8 identifier code	FF
Codabar identifier code	N
Code 128 identifier code	K
Code 93 identifier code	L
MSI identifier code	P
Standard 2 of 5 identifier code	S
NEC 2 of 5 identifier code	G
LED/Beep transmission	**Default**
LED/beep before transmission	On

Table 2: Default Data Transmit Format

Code	Message format
EAN-13	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13
EAN-8	D1 D2 D3 D4 D5 D6 D7 D8
UPCA	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12
UPCE	D1 D2 D3 D4 D5 D6 D7 D8
Code 128	D1-Dx (default 3~32)
EAN 128	]C1 D1-Dx (default 3~32)
Code 39	D1-Dx (default 3~32)
Code 32	D1-Dx (default 3~32)
CODABAR	D1-Dx (default 6~32)
Interleaved 2 of 5	D1-Dx (default 6~32)
Chinese Post Code	D1-Dx (default 8~32)
Code 93	D1-Dx (default 3~32)
MSI	D1-Dx (default 6~32)
Coop 2 of 5	D1-Dx (default 6~32)

Table 3: Trigger Command Format
(Only for RS-232C and USB-Virtual COM Port)

Command	Description
<ESC>A0<CR>	Level trigger command; scan off when trigger off command
<ESC>A1<CR>	Trigger off command
<ESC>A0.mm<CR> mm=1~60(Sec)	Edge trigger command It is not controlled by the trigger off command. Scanner starts next scan if it receives an edge trigger command and the device remains “mm” time.
<ESC>A2<CR>	Scan once (same as trigger mode)
<ESC>A2.xx<CR>	Scan once (scan off when time out)
NG LED When no read function is active, the LED indicates simultaneously.	

9.1 Parameter setting

Default settings are highlighted in gray background.

Start Of Configuration
- Scan this barcode to enter set-up process.

9.1.1 System Function Setting

Reset
- Return to factory default

Display firmware version

Return as customer default

Save as customer default

Abort
-Exit programming mode(no update)

Power-up beeper tone enable

Power-up beeper tone disable

Speaker Disable

End Of Configuration

Start Of Configuration

High beeper tone

Medium beeper tone

Low beeper tone

Loud volume

Medium volume

Slight volume

Good read beep sound duration (500msec)

Good read beep sound duration (200msec)

Good read beep sound duration (100msec)

Good read beep sound duration (50msec)

Good read beep sound duration (20msec)

Good read beep sound duration (5msec)

LED/Beep after transmission
- indicate a “good read” after a barcode is successfully decoded.

LED/Beep before transmission
- indicate a “good read” after successfully transmitting the barcode data to the host.

End Of Configuration

9.1.2 Scan Function Setting

Trigger mode
- The scanner becomes inactive once the data is transmitted. It must be triggered to active again.

Auto scan mode
- The scanner will actively scan and decode barcodes, and the same barcode cannot be read twice.

Repeat mode
- It is similar to auto scan mode, but double reading on the same barcode is permitted if uses trigger.

9.1.3 “TEST” Button Function Setting

Complex mode
- The test button controls both trigger mode and scan performance test mode.

Scan performance test mode only
- The test button only functions as scan performance test mode.
- Press down “TEST” button continuously over 2 seconds and it starts to perform scan test.

Trigger mode only
- The test button only functions as a trigger.

Start Of Configuration

9.1.4 Laser Sleep Mode Programming

* Scan barcodes to set the time for switching off the laser when the scanner is idle.

* Press the “Test” button to re-activate the laser when the scanner enters sleep mode.

Laser sleep time 5 min

Laser sleep time 10 min

Laser sleep time 15 min

Laser sleep time 20 min

Laser sleep time 25 min

Laser sleep time 30 min

Laser sleep mode off: The laser beam will never turn off even when the scanner isn't used

Laser off when in sleep mode: The laser beam will not blink when the scanner is in sleep mode.

End Of Configuration

Start Of Configuration

9.1.5 Same Code Delay

50msec

100msec

200msec

300msec

400msec

500msec

600msec

700msec

800msec

1000msec

Infinite

End Of Configuration

Start Of Configuration

9.2 Interface Setting

Enable USB-Virtual COM port

Enable HID USB keyboard

Enable RS-232 communication

9.2.1 HID USB Keyboard Wedge Setting

Enable Alt mode

Keyboard language support - USA

Keyboard language support - Japan

Capital lock on

Capital lock off

Function key emulation enable

Function key emulation disable

Send number as normal data

Send number as keypad data

End Of Configuration

Start Of Configuration

Alphabet follow as keyboard

Alphabet always upper case

Alphabet always lower case

Keyboard terminator - none

Keyboard terminator - enter

Keyboard terminator – H. Tab

9.2.2 RS-232 Interface Setting

Baud Rate

Baud rate 115200

Baud rate 57600

Baud rate 38400

Baud rate 19200

Baud rate 9600

Baud rate 4800

End Of Configuration

Start Of Configuration

Baud Rate (Continued)

Baud rate 2400

Baud rate 1200

Baud rate 600

Baud rate 300

Parity

Even parity

Odd parity

Mark parity

Space parity

None parity

Stop Bit

1 stop bit

2 stop bit

Data Bit

7 data bit

8 data bit

End Of Configuration

Start Of Configuration

Handshaking

None handshaking

ACK/NAK

Xon/Xoff

RTS/CTS (Character handshaking)

Standard CTS polarity
- high=inactive, do not send,
- low=active, do not send

Invert CTS polarity
- High=active, OK to send
- Low=inactive, do not send

Active RTS, do not wait for CTS

Active RTS, wait for CTS

RTS/CTS message handshaking

Enable beeper ON <BEL> character

Ignore beeper ON <BEL> character

ACK/NAK response time 500ms

ACK/NAK response time 300ms

End Of Configuration

Start Of Configuration

Handshaking (Continued)

ACK/NAK response time 5s

ACK/NAK response time 3s

ACK/NAK response time 2s

ACK/NAK response time 1s

ACK/NAK response time infinity

Message Terminator

RS-232 message terminator – none

RS-232 message terminator – CR/LF

RS-232 message terminator – CR

RS-232 message terminator – LF

RS-232 message terminator – H tab

RS-232 message terminator – STX/ETX

RS-232 message terminator – EOT

End Of Configuration

Start Of Configuration

9.3 The Symbologies Setting

Codabar

Codabar enable

Codabar disable

Codabar start/stop character transmission – None

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

Codabar start/stop character transmission – DC1~DC4

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

Codabar maximum length setting

Codabar minimum length setting

Save setting to confirm (for length setting)

No check character

Validate modulo 16, but don’t transmit

End Of Configuration

Start Of Configuration

Codabar (Continued)

Validate modulo 16,but transmit

Codabar data redundant check=off

Codabar data redundant check=1

Codabar data redundant check=2

Codabar data redundant check=3

Code 39

Code 39 enable

Code 39 disable

Code 32 enable

Code 32 disable

Code 39 data redundant check=off

Code 39 data redundant check=1

Code 39 data redundant check=2

Code 39 data redundant check=3

End Of Configuration

Start Of Configuration

Code 39(Continued)

Standard code 39

Full ASCII code 39

Code 39 start/stop character transmission

Code 39 start/stop character without transmission

Code 39 check digit calculate and transmit

Code 39 check digit calculate but without transmit

No check character

Code 39 maximum length setting

Code 39 minimum length setting

Save setting to confirm (for length setting)

End Of Configuration

Start Of Configuration

Code 39 (Continued)

Code 32 (Italian pharmacy) transmit “A” character

Code 32 (Italian pharmacy) without transmit ”A” character

Code 93

Code 93 enable

Code 93 disable

Code 93 data redundant check=off

Code 93 data redundant check=1

Code 93 data redundant check=2

Code 93 data redundant check=3

Code 93 maximum length setting

Code 93 minimum length setting

Save setting to confirm (for length setting)

End Of Configuration

Start Of Configuration

Code 93 (Continued)

Code 93 check digit calculated but without transmit

Code 93 check digit not calculated and without transmit

Code 93 check digit calculated and transmit

Code 128

Code 128 enable

Code 128 disable

EAN-128 enable

EAN-128 disable

Code 128 data redundant check=off

Code 128 data redundant check=1

Code 128 data redundant check=2

Code 128 data redundant check=3

End Of Configuration

Start Of Configuration

Code 128 (Continued)

No check character

Calculate but not transmit

Calculate and transmit

Code 128 maximum length setting

Code 128 minimum length setting

Save setting to confirm (for length setting)

Chinese Post Code

Chinese post code enable

Chinese post code disable

Chinese post code data redundant check=off

Chinese post code data redundant check=1

Chinese post code data redundant check=2

Chinese post code data redundant check=3

End Of Configuration

Start Of Configuration

Chinese Post Code(Continued)

Chinese post code maximum length setting

Chinese post code minimum length setting

Chinese post code no check digit

Chinese post code check digit calculate and transmit

Chinese post code check digit calculate but without transmit

Save setting to confirm (for length setting)

MSI/Plessy

MSI enable

MSI disable

MSI data redundant check= off

MSI data redundant check=1

MSI data redundant check=2

MSI data redundant check=3

End Of Configuration

Start Of Configuration

MSI/Plessy (Continued)

MSI/PLESSY maximum length setting

MSI/PLESSY minimum length setting

Save setting to confirm (for length setting)

MSI/Plessy double check digit calculate but not transmit

MSI/Plessy double check digit without calculate and transmit

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

MSI/Plessy double check digit calculate and both transmit

MSI/Plessy single check digit calculate but without transmit

MSI/Plessy single check digit calculate and transmit

End Of Configuration

Start Of Configuration

Interleave 2 of 5

ITF 2 of 5 enable

ITF 2 of 5 disable

IATA code enable

IATA disable

ITF 2 of 5 data redundant check=off

ITF 2 of 5 data redundant check=1

ITF 2 of 5 data redundant check=2

ITF 2 of 5 data redundant check=3

ITF 2 of 5 code maximum length setting

ITF 2 of 5 code minimum length setting

Save setting to confirm (for length setting)

ITF 2 of 5 no check character

ITF 2 of 5 check digit calculate and transmit

ITF 2 of 5 check digit calculate but without transmit

End Of Configuration

Start Of Configuration

Interleave 2 of 5 (Continued)

ITF 2 of 5 one fixed length setting

ITF 2 of 5 two fixed length setting

UPC/EAN/JAN

EAN convert to ISSN/ISBN enable

EAN convert to ISSN/ISBN disable

UPC/EAN/JAN enable

UPC/EAN/JAN disable

UPC/EAN/JAN all enable

EAN-8 or EAN-13 enable

UPC-A and EAN-13 enable

UPC-A and UPC-E enable

UPC-A enable

UPC-E enable

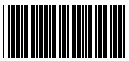
EAN-13 enable

EAN-8 enable

End Of Configuration

Start Of Configuration

UPC/EAN/JAN (Continued)



UPC/EAN add on off

Add on 5 only

Add on 2 only

Add on 2 or 5

Force UPC-E to UPC-A format enable

Force UPC-E to UPC-A format disable

Force UPC-A to EAN-13 format enable

Force UPC-A to EAN-13 format disable

Transmit UPC-A check digit enable

Transmit UPC-A check digit disable

Transmit UPC-E leading character enable

Transmit UPC-E leading character disable

Transmit UPC-E check digit enable

Transmit UPC-E check digit disable

End Of Configuration

Start Of Configuration

UPC/EAN/JAN (Continued)

Transmit EAN-13 check digit enable

Transmit EAN-13 check digit disable

Transmit EAN-8 check digit enable

Transmit EAN-8 check digit disable

Transmit UPC-A leading character enable

Transmit UPC-A leading character disable

Add on format with separator

Add on format without separator

EAN/UPC +add on (none mandatory)

EAN/UPC +add on (mandatory)

Force EAN-8 to EAN-13 format enable

Force EAN-8 to EAN-13 format disable

EAN-13 with first 0 ID code same as “EAN-13”

End Of Configuration

Start Of Configuration

UPC/EAN/JAN (Continued)

EAN-13 first “0” can transmitted

EAN-13 first:”0” can’t transmitted

EAN-13 with first 0 ID code same as “UPC-A”

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

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

EAN/UPC +add on mandatory for 978/977 (bookland)
Supplement requirement, optionally for other

EAN/UPC +add on mandatory for 978/977 (bookland)
Supplement requirement, not sent for other

End Of Configuration

Start Of Configuration

Data Editing

Code 39 identifier code setting

ITF 2 of 5 identifier code setting

Chinese Post Code identifier code setting

UPC-E identifier code setting

UPC-A identifier code setting

EAN-13 identifier code setting

EAN-8 identifier code setting

Codabar identifier code setting

Code 128 identifier code setting

Code 93 identifier code setting

MSI identifier code setting

Standard 2 of 5 identifier code setting

Coop 2 of 5 identifier code setting (For specific model only)

Save setting to confirm (for length setting)

End Of Configuration

Start Of Configuration

Data Editing (Continued)

Add code length as header enable (all barcode)

Add code length as header disable (all barcode)

Header (preamble)

Trailer (postamble)

Save setting to confirm (for length setting)

Truncate header character

Truncate trailer character

Inter character delay 100ms

Inter character delay 90ms

Inter character delay 50ms

Inter character delay 20ms

Inter character delay 10ms

End Of Configuration

Start Of Configuration

Data Editing (Continued)

Inter character delay 5ms

Inter character delay 2ms

Inter character delay 0ms

Inter message delay 1000ms

Inter message delay 500ms

Inter message delay 100ms

Inter message delay 0ms

Disable identifier code

Enable identifier code table as manufacturer standard

End Of Configuration

Start Of Configuration

Standard 2 of 5

Standard 2 of 5 code enable

Standard 2 of 5 code disable

Standard 2 of 5 code maximum length setting

Standard 2 of 5 code minimum length setting

Save setting to confirm (for length setting)

Standard 2 of 5 code no check character

Standard 2 of 5 code check digit calculate and transmit

Standard 2 of 5 code check digit calculate but without transmit

End Of Configuration

Start Of Configuration

Industrial 2 of 5

Industrial 2 of 5 code enable

Industrial 2 of 5 code disable

Industrial 2 of 5 code maximum length setting

Industrial 2 of 5 code minimum length setting

Save setting to confirm (for length setting)

Industrial 2 of 5 code no check character

Industrial 2 of 5 code check digit calculate and transmit

Industrial 2 of 5 code check digit calculate but without transmit

End Of Configuration

Start Of Configuration

Code 39 Full ASCII Table

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---NUL	00		Full ASCII ---SI Function key-----“Shift”	0F
	Full ASCII ---SOH Function key-----“Ins”	01		Full ASCII ---DLE Function key-----“5(num)”	10
	Full ASCII ---STX Function key-----“Del”	02		Full ASCII ---DC1 Function key-----“F1”	11
	Full ASCII ---ETX Function key-----“Home”	03		Full ASCII ---DC2 Function key-----“F2”	12
	Full ASCII ---EOT Function key-----“End”	04		Full ASCII ---DC3 Function key-----“F3”	13
	Full ASCII ---ENQ Function key-----“Up arrow”	05		Full ASCII ---DC4 Function key-----“F4”	14
	Full ASCII ---ACK Function key-----“Down arrow”	06		Full ASCII ---NAK Function key-----“F5”	15
	Full ASCII ---BEL Function key-----“Left arrow”	07		Full ASCII ---SYN Function key-----“F6”	16
	Full ASCII ---BS Function key-----“Backspace”	08		Full ASCII ---ETB Function key-----“F7”	17
	Full ASCII ---HT Function key-----“TAB”	09		Full ASCII ---CAN Function key-----“F8”	18
	Full ASCII ---LF Function key-----“Enter (alpha numeric”	0A		Full ASCII ---EN Function key-----“F9”	19
	Full ASCII ---VT Function key-----“right arrow”	0B		Full ASCII ---SUB Function key-----“F10”	1A
	Full ASCII ---FF Function key-----“PgUp”	0C		Full ASCII ---ESC Function key-----“F11”	1B
	Full ASCII ---CR Function key-----“Enetr(num.)”	0D		Full ASCII ---FS Function key-----“F12”	1C
	Full ASCII ---SO Function key-----“PgDn”	0E		Full ASCII ---GS Function key-----“ESC”	1D

End Of Configuration

Code 39 Full ASCII Table (Continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---RS Function key-----"CTL(L)"	1E		Full ASCII ----	2D
	Full ASCII ---US Function key-----"ALT(L)"	1F		Full ASCII ---.	2E
	Full ASCII ---SP	20		Full ASCII ---/	2F
	Full ASCII ---!	21		Full ASCII ---0	30
	Full ASCII ---"	22		Full ASCII ---1	31
	Full ASCII ---#	23		Full ASCII ---2	32
	Full ASCII ---$	24		Full ASCII ---3	33
	Full ASCII ---%	25		Full ASCII ---4	34
	Full ASCII ---&	26		Full ASCII ---5	35
	Full ASCII ---'	27		Full ASCII ---6	36
	Full ASCII --- (	28		Full ASCII ---7	37
	Full ASCII ---)	29		Full ASCII ---8	38
	Full ASCII ---*	2A		Full ASCII ---9	39
	Full ASCII ---+	2B		Full ASCII ---:	3A
	Full ASCII ---,	2C		Full ASCII ---;	3B

Start Of Configuration

Code 39 Full ASCII Table (Continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---RS Function key-----"CTL(L)"	1E		Full ASCII ----	2D
	Full ASCII ---US Function key-----"ALT(L)"	1F		Full ASCII ---.	2E
	Full ASCII ---SP	20		Full ASCII ---/	2F
	Full ASCII ---!	21		Full ASCII ---0	30
	Full ASCII ---"	22		Full ASCII ---1	31
	Full ASCII ---#	23		Full ASCII ---2	32
	Full ASCII ---$	24		Full ASCII ---3	33
	Full ASCII ---%	25		Full ASCII ---4	34
	Full ASCII ---&	26		Full ASCII ---5	35
	Full ASCII ---'	27		Full ASCII ---6	36
	Full ASCII --- (	28		Full ASCII ---7	37
	Full ASCII ---)	29		Full ASCII ---8	38
	Full ASCII ---*	2A		Full ASCII ---9	39
	Full ASCII ---+	2B		Full ASCII ---:	3A
	Full ASCII ---,	2C		Full ASCII ---;	3B

End Of Configuration

Start Of Configuration

Code 39 Full ASCII Table (Continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---<	3C		Full ASCII ---K	4B
	Full ASCII ---=	3D		Full ASCII ---L	4C
	Full ASCII --->	3E		Full ASCII ---M	4D
	Full ASCII ---?	3F		Full ASCII ---N	4E
	Full ASCII ---@	40		Full ASCII ---O	4F
	Full ASCII ---A	41		Full ASCII ---P	50
	Full ASCII ---B	42		Full ASCII ---Q	51
	Full ASCII ---C	43		Full ASCII ---R	52
	Full ASCII ---D	44		Full ASCII ---S	53
	Full ASCII ---E	45		Full ASCII ---T	54
	Full ASCII ---F	46		Full ASCII ---U	55
	Full ASCII ---G	47		Full ASCII ---V	56
	Full ASCII ---H	48		Full ASCII ---W	57
	Full ASCII ---I	49		Full ASCII ---X	58
	Full ASCII ---J	4A		Full ASCII ---Y	59

End Of Configuration

Start Of Configuration

Code 39 Full ASCII Table (Continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---Z	5A		Full ASCII ---i	69
	Full ASCII ---[	5B		Full ASCII ---j	6A
	Full ASCII ---\	5C		Full ASCII ---k	6B
	Full ASCII ---]	5D		Full ASCII ---l	6C
	Full ASCII ---^	5E		Full ASCII ---m	6D
	Full ASCII ---_	5F		Full ASCII ---n	6E
	Full ASCII ---`	60		Full ASCII ---o	6F
	Full ASCII ---a	61		Full ASCII ---p	70
	Full ASCII ---b	62		Full ASCII ---q	71
	Full ASCII ---c	63		Full ASCII ---r	72
	Full ASCII ---d	64		Full ASCII ---s	73
	Full ASCII ---e	65		Full ASCII ---t	74
	Full ASCII ---f	66		Full ASCII ---u	75
	Full ASCII ---g	67		Full ASCII ---v	76
	Full ASCII ---h	68		Full ASCII ---w	77

End Of Configuration

Code 39 Full ASCII Table (Continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---x	78		Full ASCII ---|	7C
	Full ASCII ---y	79		Full ASCII ---}	7D
	Full ASCII ---z	7A		Full ASCII ---~	7E
	Full ASCII ---{	7B		Full ASCII ---DEL	7F

Note