



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 design 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.

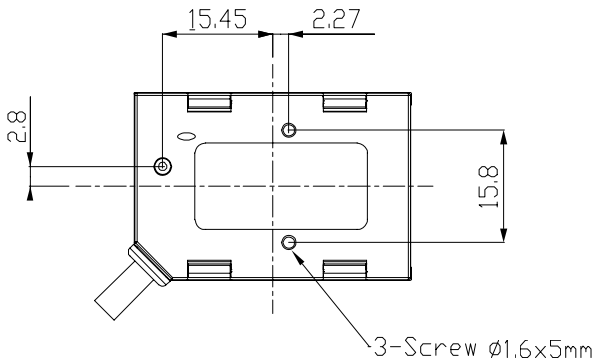
2. Outline



3. Mounting

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

Screw description: M1.6 * 0.35, Depth = 5mm
Screw quantity: 3 pieces



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

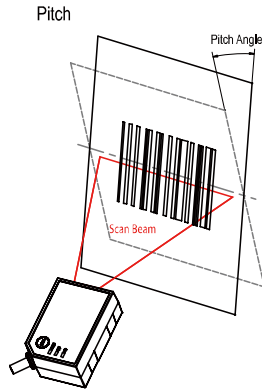
- Do not place the scanner under direct sunlight or any other bright light source illuminating.
- When placing the barcode label, one must be careful not to over tilt, skew and/or pitch the barcode (Refer to figure 2)
- Do not place the device at specula reflection position. The LED light of the scanner 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.
- The barcode label must be placed within the effective depth of field (D.O.F.), 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)



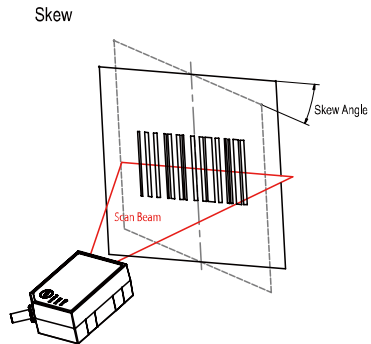
Different quality and density of barcodes could effect it's decode depth of field, usually a lower piece or high density of barcode, its depth of field is shorter. It is highly suggested to not to place the barcode label at depth of field extremes range as it is often easy to move out from the reading 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: $\pm 65^\circ$ normal
Specular Reflection: $\pm 5^\circ$



Skew Angle: $\pm 65^\circ$ normal



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

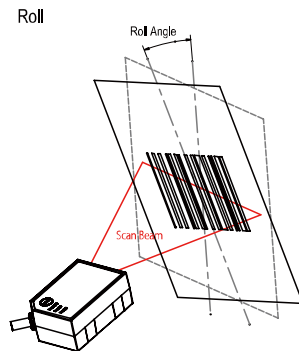


Figure 2 Skew, Pitch and Roll Angle Illustration

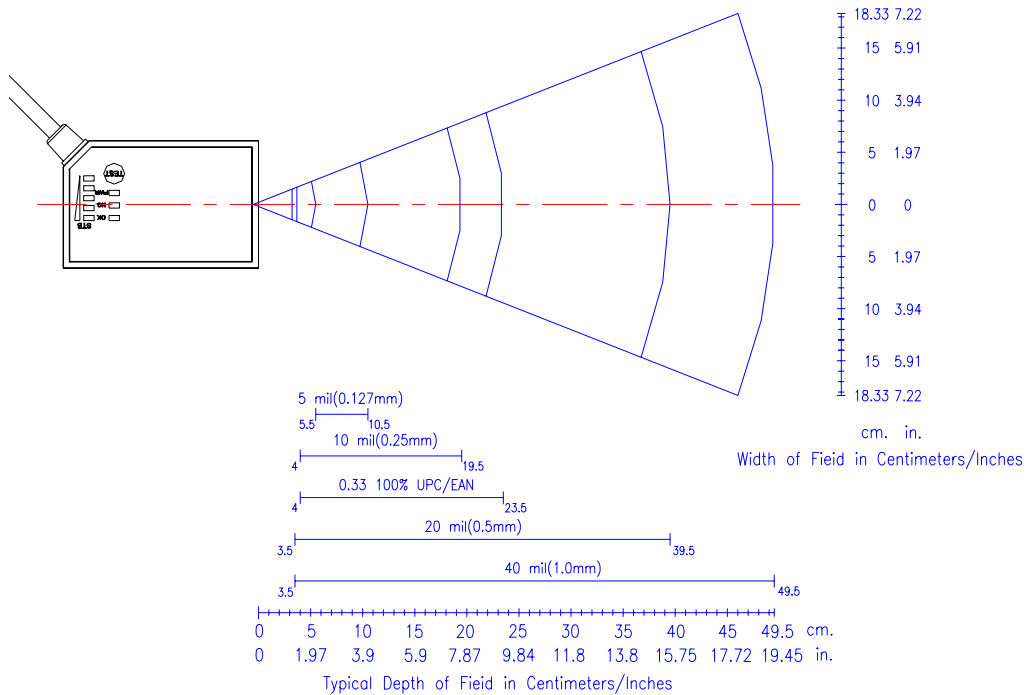
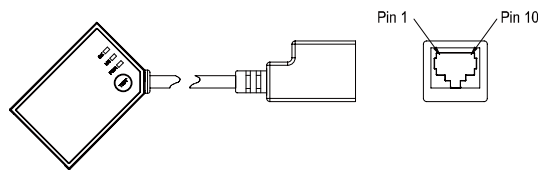


Figure 3 Decode Depth of Field

4. Connection

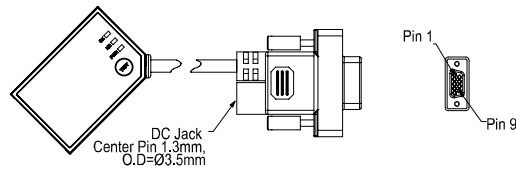
The scan module has 3 different kinds of interface connection to suit customer's desire. Below shows the connector types and pin out configuration for each interface.

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



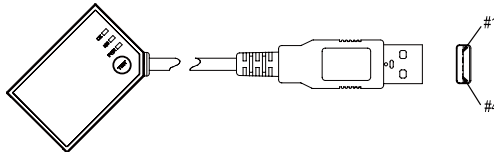
Pin #	Function
1	RTS_EIA
2	USB_D+
3	USB_D-
4	GND
5	CTS_EIA
6	RX_EIA
7	Trigger_In
8	+5V Input
9	N.C.
10	TX_EIA

(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



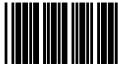
Pin #	Function
1	N.C.
2	TX_EIA
3	RX_EIA
4	N.C.

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 modes 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.

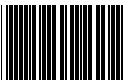


Scan performance test mode

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.

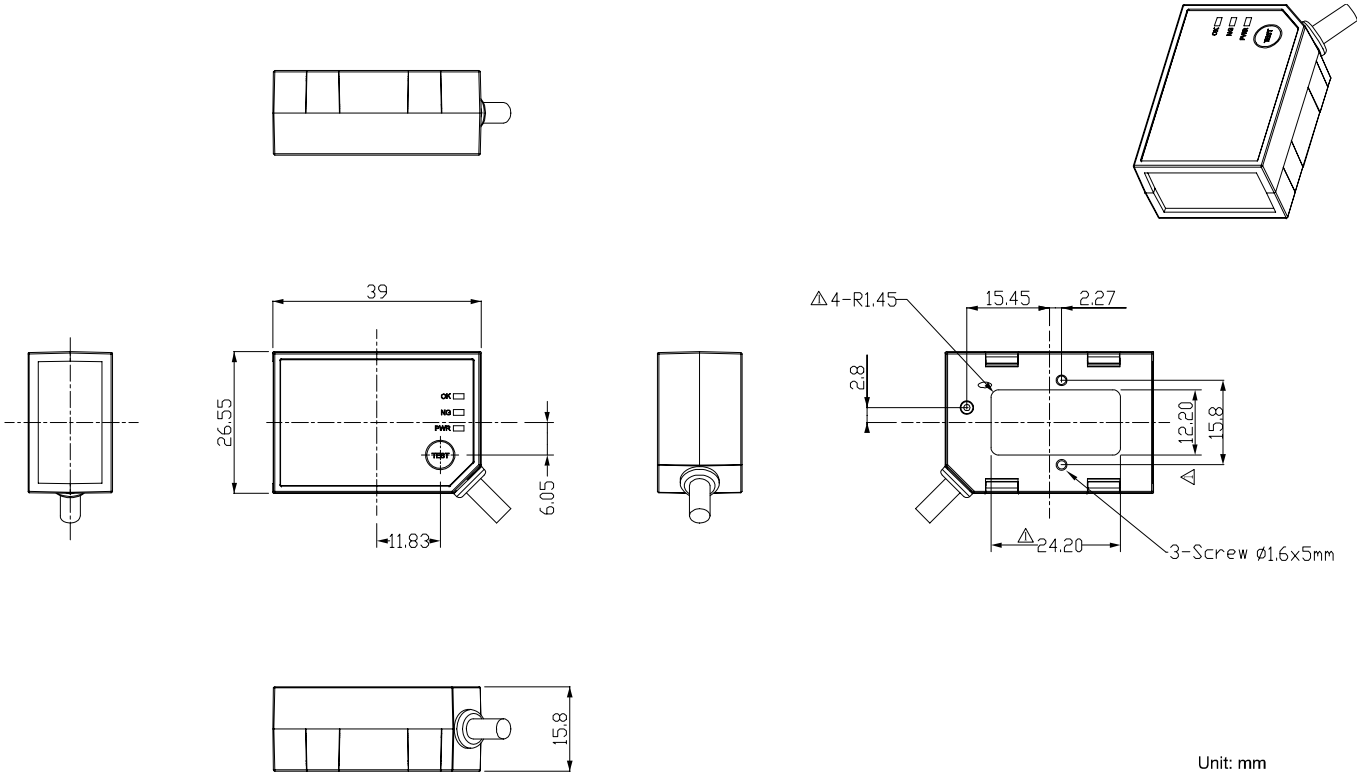
6. Technical Specification

Item	Description
Power Requirement Input voltage LED On LED Off Decode	5V \pm 5% VDC 87mA typical 37mA typical 120mA typical 150mA @ 100msec Max. 250mA @ 1msec peak
Operational Sensor Illumination Depth of field Scan rate Minimum bar width Print contrast Indicators (LED) Beeper operation Scan angle Pitch angle Skew angle Specular reflection angle System interface	2,500 pixels CCD 617nm visible red LED 40 – 235mm (UPC/EAN 100%, PCS=90%) 200 scans per second 0.125mm (5mil) (0.1mm actually) (Code 39, PCS=90%, contact) 30% @ UPC/EAN 100% “OK”, “NG”, “PWR” and “TEST” Programmable tone & beep time 43° \pm 65° \pm 65° \pm 5° RS-232C, HID USB, and USB-Virtual COM port emulation
Environment Operating temperature Storage temperature Humidity Ambient light immunity Shock Vibration	0°C ~ 50°C (32°F ~ 122°F) -20°C ~ 60°C (-4°F ~ 140°F) 5% to 95% non-condensing 7,000 Lux max. (fluorescence) 2,000G 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: <ul style="list-style-type: none"> ● 20~80Hz ramp up to 0.04G²/Hz at the rate of 3dB/oct. ● 80~350Hz 0.04G²/Hz ● 350~2000Hz ramp down at the rate of 3dB/oct.

~Technical Specification Continued~

Item	Description
Physical dimension Height Width Depth Weight Mounting	15.8mm (0.62") 26.6mm (1.05") 39.0mm (1.54") 15g 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/Plessey, EAN 128, Code 128

7. Dimension



8. 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.

9. 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 need to be used 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/Plessey	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	JC1 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 a 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 grey background.



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

9.1.1 System Function Setting

Barcode Value	Description
	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
- Scan this barcode to enter set-up process.

Barcode Value	Description
	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



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

9.1.2 Scan Function Setting

Barcode Value	Description
	Trigger mode - The scanner becomes inactive as soon as the data is transmitted. It must be triggered to active again.
	Auto scan mode - The light beam is active always, and the same barcode can not be read twice in this mode.
	Alternate mode - The light beam active when press the trigger and turns off till next triggering.
	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

Barcode Value	Description
	Complex mode - Scan this barcode to set-up the test button to control both trigger mode and scan performance test mode.
	Scan performance test mode only - Scan this barcode and 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 - Scan this barcode and the test button only functions as a trigger.






End Of Configuration












Start Of Configuration

9.2 Interface Setting

Barcode Value	Description
	Enable USB-Virtual COM port
	Enable HID USB keyboard
	Enable RS-232 communication

9.2.1 USB HID keyboard wedge setting

Barcode Value	Description
	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

Barcode Value	Description
	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

Barcode Value	Description
	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

Barcode Value	Description
	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



ACK/NAK response time 5s



End Of Configuration



Start Of Configuration

Barcode Value	Description
	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

Barcode Value	Description
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
	Codabar concatenation disable
	Codabar concatenation enable
	No check character
	Validate modulo 16, but don't transmit
	Validate modulo 16, but transmit



End Of Configuration



Start Of Configuration

Barcode Value	Description
	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
	Standard code 39
	Full ASCII code 39



End Of Configuration



Start Of Configuration

Barcode Value	Description
---------------	-------------



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



Code 39 concatenation enable



Code 39 concatenation disable



Code 32 (Italian pharmacy) transmit "A" character



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



End Of Configuration



Start Of Configuration

Barcode Value

Description

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



Code 93 check digit calculated but without transmit



Code 93 check digit not calculated and without transmit



Code 93 check digit calculated and transmit



End Of Configuration














Start Of Configuration

Barcode Value	Description
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
	Code128 FNC2 concatenation enable
	Code128 FNC2 concatenation disable
	No check character
	Calculate but not transmit
	Calculate and transmit
	Code 128 maximum length setting
	Code 128 minimum length setting

End Of Configuration



Start Of Configuration

Barcode Value	Description
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
	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



End Of Configuration



Start Of Configuration

Barcode Value	Description
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
	MSI/PLESSY maximum length setting
	MSI/PLESSY minimum 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

Barcode Value	Description
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
	ITF 2 of 5 no check character
	ITF 2 of 5 check digit calculate and transmit
	ITF 2 of 5 check digit calculate but without transmit
	ITF 2 of 5 one fixed length setting
	ITF 2 of 5 two fixed length setting

End Of Configuration



Start Of Configuration

Barcode Value	Description
---------------	-------------

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



UPC/EAN add on off



Add on 5 only



Add on 2 only



End Of Configuration



Start Of Configuration

Barcode Value	Description
UPC/EAN/JAN (Continued)	
	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
	Transmit EAN-8 check digit enable
	Transmit EAN-8 check digit disable
	Transmit EAN-13 check digit enable



End Of Configuration



Start Of Configuration

Barcode Value	Description
UPC/EAN/JAN (Continued)	
	Transmit EAN-13 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 first "0" can transmitted
	EAN-13 first:"0" can't transmitted
	EAN-13 with first 0 ID code same as "UPC-A"
	EAN-13 with first 0 ID code same as "EAN-13"



End Of Configuration



Start Of Configuration

Barcode Value

Description

UPC/EAN/JAN (Continued)



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

Barcode Value

Description

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)



End Of Configuration



Start Of Configuration

Barcode Value

Description

Data Editing (Continued)



Add code length as header enable (all barcode)



Add code length as header disable (all barcode)



Header (preamble)



Trailer (postamble)



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



Inter character delay 5ms



Inter character delay 2ms



Inter character delay 0ms



End Of Configuration



Start Of Configuration

Barcode Value	Description
Data Editing (Continued)	
	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

Barcode Value	Description
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
	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

Barcode Value

Description

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



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



Start 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



End Of Configuration