This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interface, and (2) This device must accept any interface received, including Interface that may cause undesired operation.

NOTICE

This equipment has been tested and found comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interface when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interface to radio communications. Operation of this equipment in a residential area is likely to cause harmful interface in which case the user will be required to correct the interface at his own expense.

☛ Specifications are subject changed without notice.

Version:2014-03-27

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Installation

1) First of all, you must make sure that the power is disconnected from your equipment before connecting the scanner. Beside, you also have to check the cable connector of the scanner match your equipment interface correctly.

2) Boot up your computer after connecting the scanner with your equipment, the scanner will make a long music and light the LED, above scanner to indicate a successful power on. Trigger the button, the scan line in front of scanner will active. Now you can start to set programming optimal usage.

☛ If any of the above operation is not right, turn off the power immediately and check any improper connections. Go through all above steps again.

Recommened Steps

When the required settings have been configured, all settings are stored in non volatile memory of scanner after reading End label. There are recommended steps as follows.

1) Set right host interface for your scanner at 10.
   (The scanner is in factory default as bold label)

2) Set interface to optimize protocol of scanner with your host in Charter 2.

3) Set system control of scanner, such as specific adjustments double confirm, power saving, indicator and scanning mode which you prefer usage in Chapter 3.

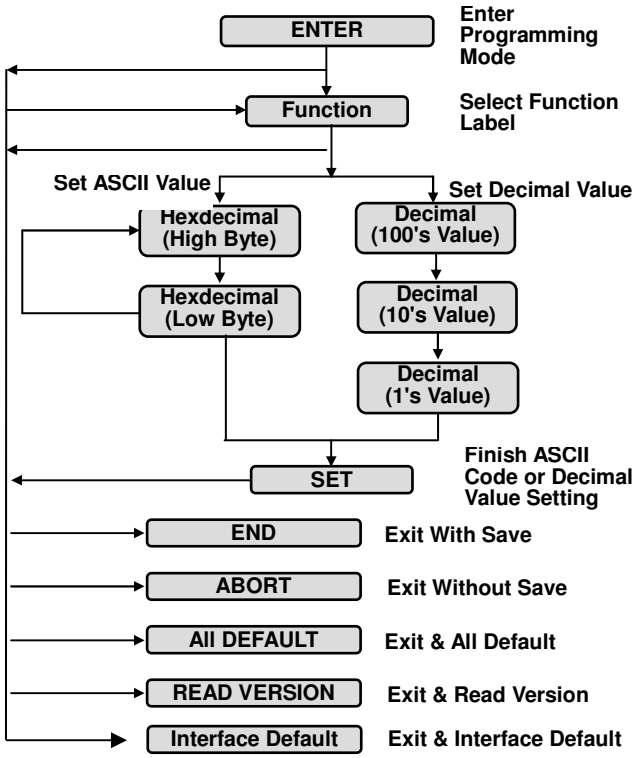
4) Set code option of scanner for your usage in Chapter 4. You must make sure to enable the symbology first, then Min./Max. code length, code ID checksum and truncate digits are also convered.

5) Set string format of the scanner, such as preamble, postamble, prefix, suffix, code ID and code name transmission for your application in Chapter 5.

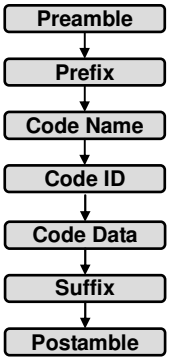
☛ If any error step were processing, scanner will generate a 5 beeps as warnning. You have to take care this matter and set correctly again.

☛ If it is still not work properly,please contact with dealer.

Configuration Flowchart



String Output Flowchart



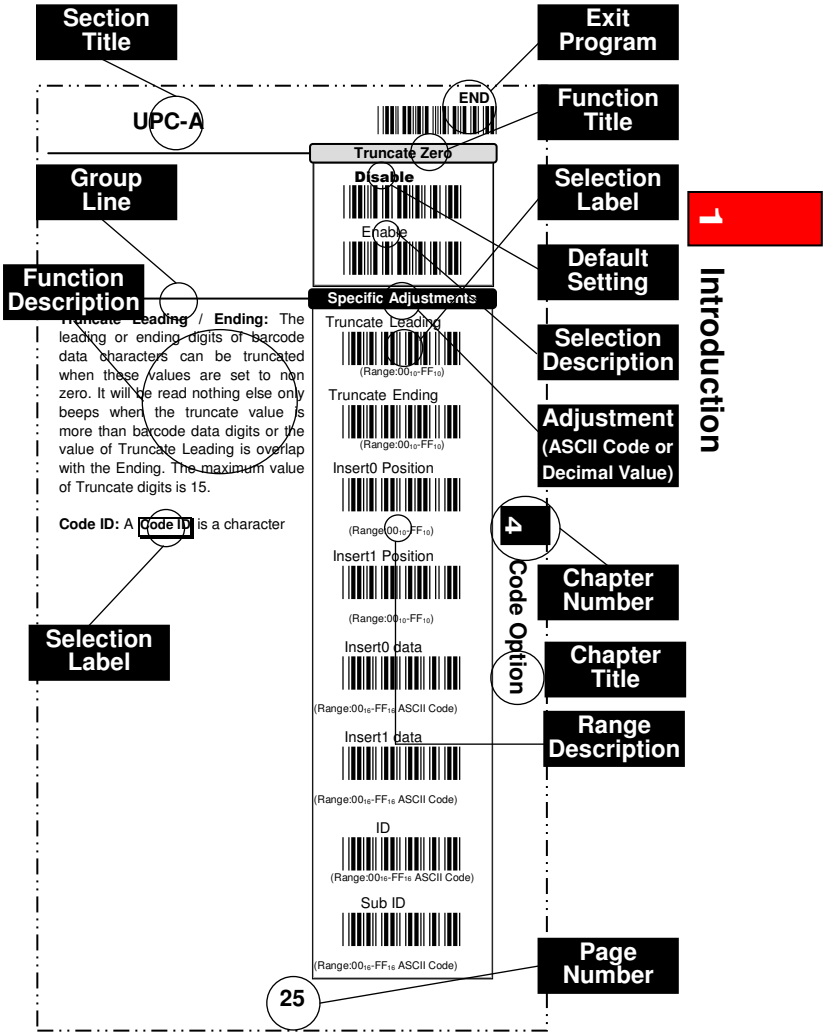
Default Setting

Code Type	Read Enable	Length		Truncate		Code ID
		Min.	Max.	Leading	Ending	
UPC-A	✓	-	-	0	0	A
UPC-E	✓	-	-	0	0	E
EAN-13	✓	-	-	0	0	F
EAN-8	✓	-	-	0	0	FF
Code-39	✓	0	0	0	0	M
Interleaved 2 of 5		4	0	0	0	I
Industrial 2 of 5		4	0	0	0	H
Matrix 2 of 5		4	0	0	0	G
Codabar/NW7	✓	0	0	0	0	N
Code-128	✓	0	0	0	0	K
Code-93		0	0	0	0	L
Code-11		0	0	0	0	O
MSI/Plessey		0	0	0	0	P
UK/Plessey		0	0	0	0	R
Telepen		0	0	0	0	S
RSS		0	0	0	0	T
RSS Limit		0	0	0	0	U
RSS Stack		0	0	0	0	V
RSS Expansion Limit		0	0	0	0	W
RSS Expansion Stack		0	0	0	0	X

Adjustment	Value	Result
Beep Loudness	05	Level 5
Beep Tone	27	2.4 Hz
Beep Duration	10	10 mSec
Stand-by Time	05	1 Sec
Led Off Delay	20	100 mSec
Lamp Off Delay	05	1000 mSec
Good read Time	05	100 mSec
Double Confirm Times	02	Once
Tx Gap	00	1 mSec
Tx Delay	00	10 mSec
Timeout	03	1 Sec
Wait Addon Count	10	Once
Preamble Data	00_{16}	<NULL>
Postamble Data	00_{16}	<NULL>
Prefix Data (All Datas)	00_{16}	<NULL>
Suffix Data (All Datas)	$0D_{16}0A_{16}$	<CR><LF>

Manual Label Layout

The scanner must be set by reading the barcode labels in manual. The discription of label is as follows.



☛ The factory default settings are indicated by bold symbols.

Frequent Question

Q: Why scanner block the keyboard operation?

A: Check the cable connection with your equipment, then turn power on again.

Q: If the scanner dosen't need an Enter character addition after each barcode label transmission.

A: Refer to postamble transmission at 66, then set Disable.

Q: If the scanner needs to read single digit code.

A: Refer to Min. code length of code option use "01" in Chapter 4 for single code readable.

Q: If the scanner can't discriminate an unknown label, but read manual very well.

A: Refer to code name at 20 to set Enable, read a barcode label, then you will know what symbology is read. Beside, it maybe need to verify checksum. Refer to verify checksum of code option in Chapter 4, and set Enable.

Q: If the scanner transferred characters very slow or lost some characters when data be output to screen by keyboard interface

A: You may set caps lock to be Alt+Keypad at 11. Otherwise, it maybe mis-match of transmission rate, therefore, you can adjust an appropriate Tx Gap to match your equipment. See 12.

Q: If the scanner only sounds beep when read barcode but didn't send data to PC.

A: It is the communication problem between scanner interface and PC. It may be cuased by cable damaged or wrong interface setting. Check your cable connection and set the interface setting again.

Q: What does Tx , Tx Gap mean ?

A: Tx means transmittion. Tx Gap means transmittion of Inter-character delay. See 12.

☛ Call to the dealer if scanner dose not work properly.

1 Introduction

ENTER

Host Interface

Type

0DC1 **Keyboard**

0DC2 **RS232**

If the interface cable you have is PS2 or USB HID, please set as Keyboard. If it is USB COM or RS232 type, please set as RS232. .

Type

ZADE **ALL DEFAULT**

ZDEF **BARCODE DEFAULT**

ZKBD **KEYBOARD DEFAULT**

Z232 **RS232 DEFAULT**

ZVER **VERSION**

ZEXT **ABORT**

ZISP **ISP**

All Default::All settings will be reset as bold label,but exclude interface setting.

Barcode Default: Restore to default barcode setting

Keyboard Default: Restore to keyboard interface default setting

RS232 Default: Restore to RS232 interface default setting

Version: You can get the firmware version & date of decoder.

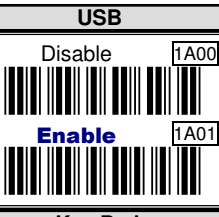
ABORT: To skip or give up current configuration, so all previous setting will be aborted before you set END to finish programming.

ISP: After enable ISP, the scanner will become COM interface and can be update firmware or configuration to scanner.

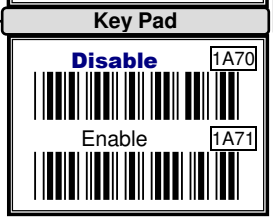
☛ **End user please don't update firmware by yourself, unless you get correct instruction from your dealer. Because improper procedure may cuase damage on the scanner.**

Keyboard

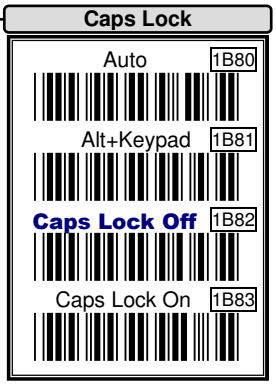
End



If select Enable means you use the usb hid,if select Disable means you use the ps2 cable.



The Keypad must be enable if your application program can accept numeric code from keypad only. The scanner will output code as numeric key-pad did when it read numeric digit.

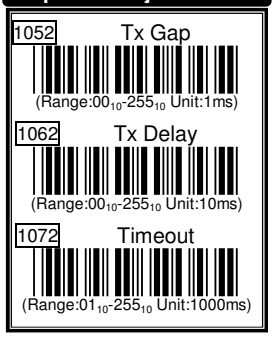


By selecting Caps Lock On or Caps Lock Off, scanner can get Caps Lock status. If Alt+Keypad were selected, Caps Lock and output will be independent.The Auto function can be effect when USB HID or KB Simulation is enable.When you set Auto, the scanner will detect the status of Keyboard Caps Lock.So the batcode data outputwill follow the status of Keyboard Caps Lock.

Example Barcode "ABCdef"

Status / Selection	Caps Lock **On**	Caps Lock **Off**
Caps Lock On	ABCdef	abcDEF
Caps Lock Off	abcDEF	ABCdef
Alt+Keypad	ABCdef	ABCdef

Specific Adjustments



Tx Gap: It will delay the output timing of per digit. If the output speed is too high, the system may not receive all digits. If so, try out suitable delay time to make system work properly.

Tx Delay: It can be used while you will scan several continued short barcode or multi-filed barcode. This function will delay the timing after barcode.

It can delay the waiting time of serial scanner for the handshaking acknowledgment from the host PC. If scanner didn't get acknowledgment from host PC after timeout occur, the scanner will sound 5 beeps as warning. You may need to check the handhsanking mode or adjust to longer delay timer. The function is particular useful for some applications which the host PC will take longer respond time

*** TX means : transmission**

Example Barcode Data: "**ABCD**" Tx Gap: **2ms**
Tx Delay: **10ms**

1) **ENTER**⇨ Entry Programming

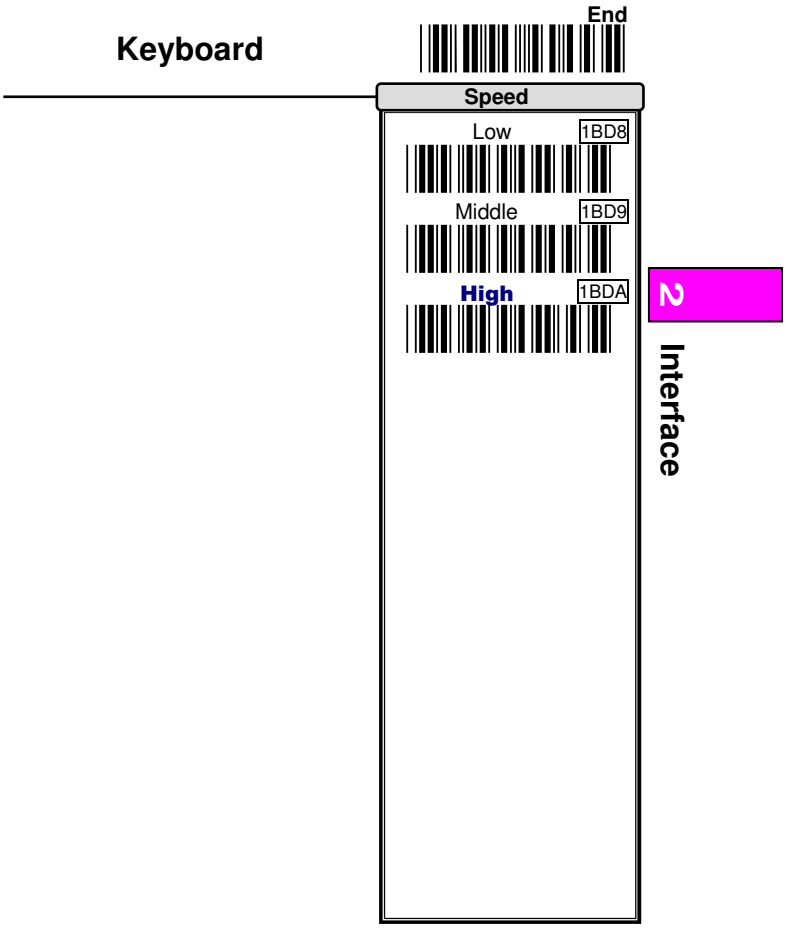
2) **Tx Gap**⇨**0**⇨**2**⇨**SET**⇨ 2ms Inter-char. Delay
02*1ms(Unit)=2ms

3) **Tx Delay**⇨**0**⇨**1**⇨**SET**⇨ 10ms Transmit Delay
01*10ms(Unit)=10ms

4) **END** Exit Programming

Output

A	**2ms**	B	**2ms**	C	**2ms**	D	**2ms**	**10ms**


Keyboard
End
Speed
Low
1BD8
Middle
1BD9
High
1BDA
2
Interface

ENTER

Keyboard

Layout

1DC0 **USA (US)**

1DC1 UK (UK)

1DC2 Japan

1DC3 France(FR)

1DC4 Germany (GR)

1DC5 Italian (IT)

1DC6 Spanish (SP)

1DC7 Portuguese (PO)

Here you can set up the scanner's language to match your computer keyboard layout.

END

USB COM

If the scanner is with USB cable but virtual COM interface, it should be programmed as **USB COM enable,** otherwise, the data will not be output to the PC.

Note:CM-200 & CM-500 default value is "Enable"

Disable 2A00

Enable 2A01

Protocol

CTS: Clear To Send (Hardware Signal)
RTS: Request To Send (Hardware Signal)
Xon: Transmit On (ASCII Code 13_{16})
Xoff: Transmit Off (ASCII Code 11_{16})

None: It only uses TxD and RxD signal without relation for any hardware or software handshaking protocol.

RTS/CTS (CTS/RTS): If the scanner sent barcode data to host computer, it will issue the singal of RTS (CTS) first, and wait for the signal returned from the host computer. Then it will perform the normal data communication. If there is no CTS (RTS) signal returned from the host computer after timeout (Response Delay), the scanner will sound 5 beeps as warning.

None 2CC0

RTS/CTS 2CC1

CTS/RTS 2CC2

Scanner Ready 2CC3

Data Ready 2CC4

Xon/Xoff 2CC5

Scanner Ready: The scanner will issue signal of RTS after power-on, then transmit data upon receiving active CTS signal.

Data Ready: The scanner will issue signal of RTS to indicate a successful decoding and will transmit data upon receiving CTS signals.

Xon/Xoff: When the host PC can't accept data, it will notice the scanner to suspend data transmission by sending an Xoff code, and Xon as to be continuded.

☛**Remark :** If the interface is USB COM, it does not support **Protocol** setting.

ENTER

RS232

Baud Rate

2BDC **115200 Bps**

2BDB 57600 Bps

2BDA 38400 Bps

2BD9 19200 Bps

2BD8 9600 Bps

2BD7 4800 Bps

2BD6 2400 Bps

2BD5 1200 Bps

2BD4 600 Bps

2BD3 300 Bps

Data Bits

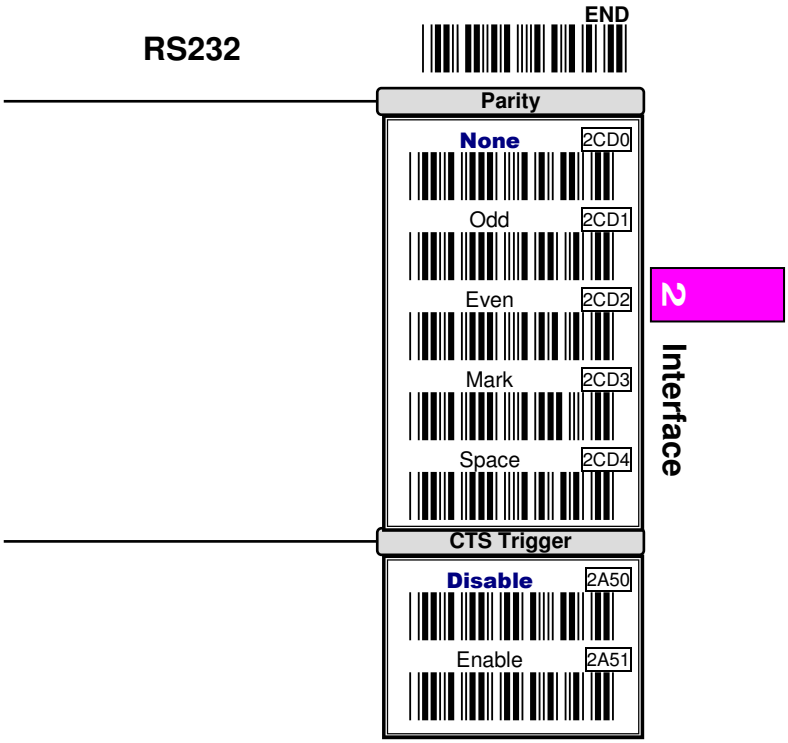
2A60 7 Bits

2A61 **8 Bits**

Stop Bits

2A70 **1 Bits**

2A71 2 Bits


RS232
END
Parity
None
2CD0
Odd
2CD1
Even
2CD2
Mark
2CD3
Space
2CD4
CTS Trigger
Disable
2A50
Enable
2A51
2
Interface

Specific Adjustments

2052 Tx Gap

(Range:00_{10}-255_{10} Unit:1ms)

2062 Tx Delay

(Range:00_{10}-255_{10} Unit:10ms)

2072 Timeout

(Range:01_{10}-255_{10} Unit:1000ms)

Tx Gap: It will delay the outout timing of per digit . It is same as Tx Gap of keyboard wedge on 12.

Tx Delay: It is a delay time after barcode. It is same as Tx Delay of Keyboard wedge on 12.

Timeout: It is same as Timeout of Keyboard wedge on 12.

END

Power on Music

The power-on music will indicate the scanner as successful power on. It can be inhibitted by setting Disable.

Disable 0A40

Enable 0A41

Power on Trigger

The scanner can be activated LED light source without trigger pushed by setting Enable,

Disable 0A50

Enable 0A51

Good read Beep

The scanner will sound a beep for per successful barcode reading when it is set Enable . And the beep Volume, Tone and Time can be adjusted by setting on 23.

Disable 8B00

Enable 8B01

Reject Same

If set Enable,the same barcode will not be scanned. But this function work under “Continue” or “Momentory” or “Alternate” Mode.

Disable 8B60

Enable 8B61

Object Detect

This is auto sensor function. So even the LED is off, but when object or barcode under the scan range, it will be auto LED on and scan barcode by set Enable.This function is only applicable in CM003, CM008, CM300 and CM 1002 series.

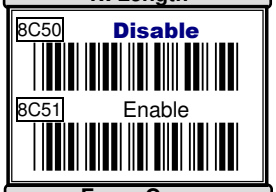
Disable 0A60

Enable 0A61

ENTER

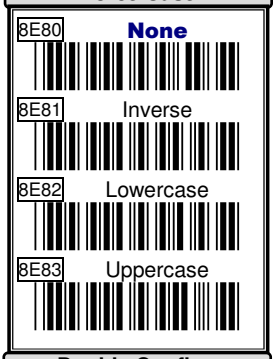
System Control

Tx Length



If your application need Barcode Length, you must set this function to be Enable.

Force Case

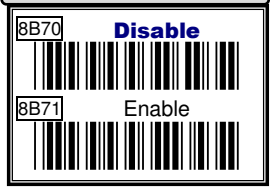


It will converse all output digits to be same printing-case, even one barcode may have two kinds of case.

Example Barcode "BarCode",

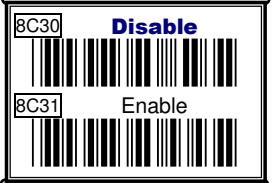
Inverse	bARcODE
Uppercase	BARCODE
Lowercase	barcode

Double Confirm



When barcode is easy misreading, try this function. Then scanner will output the data after same decoding by double times. For more times confirm, please refer Doubble Confirm Count on 24. But double confirm will delay the scan speed.

Tx Code ID



If your application need Code ID, you must set this function to be Enable.

Code ID Position

Upon your usage, the output position of Code ID can be Before or After Code Data by setting.

System Control

END

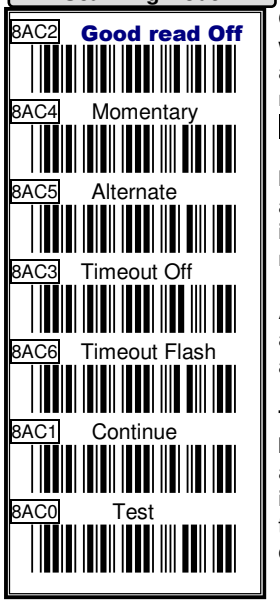
This function can show unknown barcode type which is readable by this scanner. When Enable is set, Code Name will be showed on front of per barcode, then you will know what kind of barcode symbology it is.

Tx Code Name

Disable 8C00

Enable 8C01

Scanning Mode



Good read Off: The LED light source will be on when the tirgger is pushed and then be off when a barcode is read successfully. And you can refer Stand-by Time on 23.

Momentary: The trigger will act as a switch. When the trigger is pressed, it will scan barcode, when it is released it will stop to scan.

Alternate: The trigger will be act as a toggle switch. Press button to active or stop scanning.

Timeout Off: The scanner will scan barcode when trigger is pressed, and it will stop scanning when barcode is not decoded after stand-by time elapsed. Stand-by Time setting is on 23.

TimeOut Flash: The scanner will scan barcode when trigger is pressed, Light source turns flashing when barcode is not decoded after stand-by time elapsed. Stand-by Time setting is on 23. This function is only applicable in CM-003 series.

Continue: No need to press the trigger then the scanner can read barcode when the LED light source is on.

Test: The scanner will always keep reading continuously and same barcode reading is allowed without double confirm. The feature can test the performance of scan speed and sensitive.

☛ For saving power and keeping longer life of laser component, the laser beam and motor will be stopped when no code is decoded for all above scanning mode .

END

Specific Adjustments

Beep Volume 8142
(Range:00_{10}-10_{10} Unit:Level)

Beep Tone 8162
(Range:00_{10}-50_{10} Unit:100Hz)

Beep Time 8152
(Range:00_{10}-255_{10} Unit:10ms)

Standby Time 8122
(Range:00_{10}-255_{10} Unit:1s)

LED Off Delay 8192
(Range:00_{10}-255_{10} Unit:10ms)

Lamp off Delay 8172
(Range:00_{10}-255_{10} Unit:1s)

Good read Time 8112
(Range:00_{10}-255_{10} Unit:100ms)

Setup Timeout 0072
(Range:00_{10}-255_{10} Unit:1000ms)

Object Detect level 0052
(Range:00_{10}-255_{10})

Object Detect Time 0062
(Range:00_{10}-255_{10} Unit:100ms)

Beep Adjustments: You can adjust Beep Volume, Beep Tone and Beep Time of good reading upon your pavorite usage.

Stand-by Time: The timeout duration can be adjusted from 1 to 99 seconds. The Stand-by Time is only effective during Good-read Off & Timeout Off mode for CCD scanner. If no code to be read after Stand-by Time, on laser scanner,the laser beam and motor will be shutdown to keep the life time of laser diode.

LED/Lamp Off Delay: There are two kinds LED light source durations for all scanning mode. The scanner light source will be flash when no code is read until Standby Time is timeout. The Led Off Delay is lighting duration and the Lamp Off Delay is blanking duration. The scanner can still read barcode during the light source is flashing and then be waked up automatically when read a barcode.

Setup Timeout : It is the timer between scanner go into " Enter" and quit " End". So that means you need to finish whole setting before the setup timeout timing. Otherwise, the scanner will quit the setting mode as soon as the time is up.

Object Detec Level : It is the function of auto detection. You can set up the level of detection sensitivity you want.

Object Detect Time : It can adjust the time for auto detection duration.

Specific Adjustments

8132 Wait Addon Count

(Range:00_{10}-255_{10})

8102 Double Confirm count

(Range:00_{10}-10_{10})

81E2 Global Min. Length

(Range:00_{10}-255_{10})

81F2 Global Max. Length

(Range:00_{10}-255_{10})

Wait Addon Count: This setting is used for WPC add-on code, such as EAN and UPC. The WPC code must be decoded first, then Add-on. Add-on may not be decoded with WPC at the same time. Therefore, you can set **wait addon count** to force the add-on code must be output with WPC code together.

If the Wait addon count is set as "0",the barcode data will only be output with add-on code.

Double Confirm Count: The more confirm times the less miss-reading will be happened. This feature should depend on the symbology and printing quality of barcodes. Selecting a higher value will reduce read-out speed.

Global Min. / **Max. Length:** When you set min. length, barcode digits number which is under the min. length, it will not be decoded. If you set Max. length, the barcode digits which is over the value will not be decoded,neither. But the values setting will not effect in some fixed length symbobolgies (i.e. UPC and EAN is called WPC). If Min. Length and Max Length are specified, and Min.length > Max. Length, the barcode data will only decoded by the length of two specified value of Min. Length and Max. Length.

END

ENTER

UPC-A

Read

AA70 Disable

AA71 **Enable**

Format

Leading Zero	Data Digts (11 Digits)	Check Digit

Addon Type

AB90 **None**

AB91 Addon 2

AB92 Addon 5

AB93 Addon 2+5

The Add-on barcode is the supplemental 2 or 5 digits for WPC code.

Format

Leading Zero	Data Digits (11 Digits)	Check Digit	Add-on 2 or 5

Wait Addon

AA00 **Disable**

AA01 Enable

It is recommended to set Enable if you want the UPC can be output with add-on code together. Please enable this function first and refer Wait Addon Count at 24 for good reading of Add-on code.

Tx Chksum

AA60 Disable

AA61 **Enable**

By setting Enable, check characters will be transmitted.

UPC-A

END

Truncate Zero

The all leading "0" of barcode data will be truncated when this function is enabled.

Example Barcode "00054321"

Output "54321"

Disable AA50

Enable AA51

Specific Adjustments

Truncate Lead / End: The leading or ending character of barcode data will be truncated when these values are set to non zero. It will be output nothing except beeps if the truncate value is more than barcode data digits or overlap with the Ending. The maximum value of Truncate digits is 15.

Truncate Lead A082
(Range:00_{10}-255_{10})

Truncate End A092
(Range:00_{10}-255_{0})

ID: The [ID] is a character which is used to represent the symbobly while successful reading. It will be prefixed on the front or back barcode. There are some symbobolgies (i.e. UPC-E and EAN-8) include 2 Code ID. If your application need Code ID, please enable Code ID Transmission first. You can refer the setting at 20.

Insert0 Position A0C2
(Range:00_{10}-255_{10})

Insert1 Position A0D2
(Range:00_{10}-255_{10})

Insert0 Data A0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert Position & Data : This function can append one or two characters into the barcode data. But you need to make sure the value of insert position can not be greater than the length of barcode. Otherwise, your setting will be no effect. You can add an Insert Data 0 at Insert Position 0

Insert1 Data A10B
(Range:00_{16}-FF_{16} ASCII Code)

ID A12B
(Range:00_{16}-FF_{16} ASCII Code)

☛If the insert position you set is 0, the character will be inserted in the front of the barcode. If the value is FF, the inserted position will be behind the barcode. If the value is 1, the character will be inserted behind the first barcode digit. If the value is 2, the character will be inserted behind the second digit……and so forth.

ENTER

UPC-E

Read

BA70 Disable

BA70 **Enable**

Format

Leading Zero	Data Digits (6 Digits)	Check Digit

Add-on

BB90 **None**

BB91 Addon 2

BB92 Addon 5

BB93 Addon 2+5

Format

Leading Zero	Data Digits (6 Digits)	Check Digit	Add-on 2 or 5

Wait Addon

BA00 **Disable**

BA01 Enable

Refer 🗀26.

Expansion

BA10 **Disable**

BA11 Enable

This expansion function is for UPC-E and EAN-8 only. It will extend the barcode to be 13-digits by " 0 " zero. .

Example Barcode "01236547"

Output "0012360000057"

Tx CheckSum

BA60 Disable

BA61 **Enable**

Refer 🗀26.

UPC-E

END

Refer 27.

Truncate Zero

Disable BA50

Enable BA51

Refer 27.

Truncate Zero

Truncate Lead B082
(Range:00_{10}-255_{10})

Truncate End B092
(Range:00_{10}-255_{10})

Insert0 Position B0C2
(Range:00_{10}-255_{10})

Insert1 Position B0D2
(Range:00_{10}-255_{10})

Insert0 Data B0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data B10B
(Range:00_{16}-FF_{16} ASCII Code)

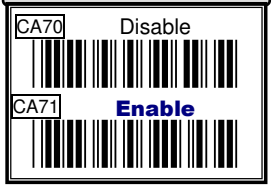
ID B12B
(Range:00_{16}-FF_{16} ASCII Code)

Sub ID B14B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

EAN-13

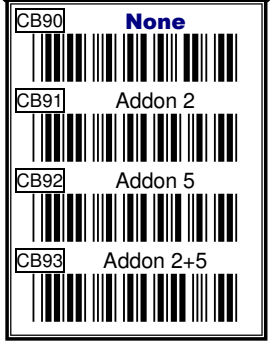
Read



Format

Data Digts (12 Digits)	Check Digit

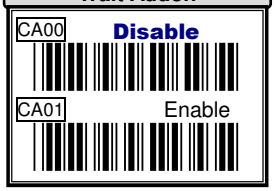
Addon type



Format

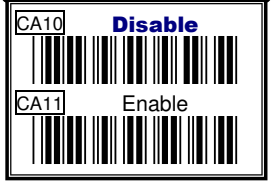
Data Digits (12 Digits)	Check Digit	Add-on 2 or 5

Wait Addon



Refer □26.

ISBN/ISSN Conversion



The ISBN (International Standard Book Number) and ISSN (International Standard Serial Number) are especial barcode for book and magazine. The ISBN is 10 digits with leading "978" and the ISSN is 8 digits with leading "977" of "EAN-13" .

Example Barcode "9789572222720" **Output** "9572222724"

Example Barcode "9771019248004" **Output** "10192484"

EAN-13

END

Refer 26.

Tx Chksum

Disable CA60

Enable CA610

Refer 27.

Truncate Zero

Disable CA50

Enable CA51

Refer 27.

Specific Adjustments

Truncate Lead C082
(Range:00_{10}-255_{10})

Truncate End C092
(Range:00_{10}- 255_{10})

Insert0 Position C0C2
(Range:00_{10}- 255_{10})

Insert1 Position C0D2
(Range:00_{10}- 255_{10})

Insert0 Data C0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data C10B
(Range:00_{16}-FF_{16} ASCII Code)

ID C12B
(Range:00_{16}-FF_{16} ASCII Code)

Sub ID C14B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

EAN-8

Read

DA70 Disable

DA71 **Enable**

Format

Data Digits (7 Digits)	Check Digit

Addon Type

DB90 **None**

DB91 Addon 2

DB92 Addon 5

DB93 Addon 2+ 5

Format

Data Digits (7 Digits)	Check Digit	Add-on 2 or 5

Wait Addon

DA00 **Disable**

DA01 Enable

Refer 26.

Expansion

DA10 **Disable**

DA11 Enable

Refer 26.

Truncate Zero

DA50 **Disable**

DA51 Enable

Refer 27.

EAN-8

END

Refer 26.

Tx Chksum

Disable DA60

Enable DA61

Refer 27.

Specific Adjustments

Truncate Lead D082
(Range:00_{10}-255_{10})

Truncate End D092
(Range:00_{10}- 255_{10})

Insert0 Position D0C2
(Range:00_{10}- 255_{10})

Insert1 Position D0D2
(Range:00_{10}- 255_{10})

Insert0 Data D0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data D10B
(Range:00_{16}-FF_{16} ASCII Code)

ID D12B
(Range:00_{16}-FF_{16} ASCII Code)

Sub ID D14B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

CODE-39

Read

EA70 Disable

EA71 **Enable**

Format

Start	Data Digits	Checksum	End
"*"	(Variable)	(Optional)	"*"

Type

EB90 **Standard**

EB91 Full ASCII

The Full ASCII function is an enhanced setting for Code-39 which is with toatal 128 digits to represent Full ASCII code. It must be combined by either one of **+ , % , $** or / and one of alpha character (A to Z).

Format

EBA0 **None**

EBA1 Code-32

EBA2 Code-32 with 'A'

The Code-32 symbology (Italian Pharmaceutical) is another version of Code-39 which max. can be 10 digits and can be 0 – 9 digits. The leading A is an optional character and can be set to be transmitted or not.

Tx Start/End

EA20 **Disable**

EA21 Enable

The Start and End character of Code-39 must be "✱". You can transmit all data digits including two "✱" by set Enable.

Truncate Zero

EA50 **Disable**

EA51 Enable

Refer 🗀27.

CODE-39

END

The checksum of Code-39 is optional and it is made the sum module 43 as the numerical value of the data digits.

Verify Checksum

Disable EBB0

Enable EBB1

By setting Enable, checksum will be transmitted.

Tx Checksum

Disable EA60

Enable EA61

Min. / Max. Code Length: Each symbology has its own Min./Max. Code Length. They can be set to qualify data entry. If the Min./Max. Code Length is zero, the Public Min./Max. Code Length will be changed. The length is defined by the actual barcode length transmitted. If the barcode length is over the value of min/max. length, it will not be output. Make sure the Minimum length value is not bigger than the Maximum length, otherwise, this barcode will not be output. In particular, you can set the same value for Minimum and Maximum length to have the fixed length barcode must be decoded.

Refer 27.

Specific Adjustments

Truncate Lead E082
(Range:00_{10}-255_{10})

Truncate End E092
(Range:00_{10}- 255_{10})

Min. Length E0A
(Range:01_{10}- 255_{10})

Max. Length E0B2
(Range:01_{10}- 255_{10})

Insert0 Position E0C2
(Range:01_{10}- 255_{10})

Insert1 Position E0D2
(Range:01_{10}- 255_{10})

ENTER

CODE-39

Specific Adjustments

E0DB Insert0 Data

(Range:00_{16}-FF_{16} ASCII Code)

E10B Insert1 Data

(Range:00_{16}-FF_{16} ASCII Code)

E12B ID

(Range:00_{16}-FF_{16} ASCII Code)

E14B Sub ID

(Range:00_{16}-FF_{16} ASCII Code)

Refer 27.

Interleaved 2 of 5

END

Format

Data Digits (Variable)	Checksum (Optional)

Read

Disable HA70

Enable HA71

Verify Checksum

The checksum is made the sum module 10 as the numberical values of all data digits.

Disable HBB0

Enable HBB1

Tx Checksum

Refer 26.

Disable HA60

Enable HA61

Truncate Zero

Refer 27.

Disable HA50

Enable HA51

ENTER

Interleaved 2 of 5

Specific Adjustments

H082 Truncate Lead

(Range:00_{10}-255_{10})

H092 Truncate End

(Range:00_{10}- 255_{10})

H0A2 Min. Length

(Range:00_{10}- 255_{10})

H0B2 Max. Length

(Range:00_{10}- 255_{10})

H0C2 Insert0 Position

(Range:00_{10}- 255_{10})

H0D2 Insert1 Positionh

(Range:00_{10}- 255_{10})

H0EB Insert0 Data

(Range:00_{16}-FF_{16} ASCII Code)

H10B Insert1 Data

(Range:00_{16}-FF_{16} ASCII Code)

H12B ID

(Range:00_{16}-FF_{16} ASCII Code)

Because, the start and end of interleaved 2 of 5 code is not olny one patten in symbol. In order to prevent partial reading, it is recommand to use the fixed code length for each 2 of 5 code barcode label. Setting the same **Min./Max. Code Length**, it is like a length filter, and only one length is accepted.

Refer 27 & 35.

Industrial 2 of 5

END

Format

Data Digits (Variable)	Checksum (Optional)

Read

Disable IA70

Enable IA71

Truncate Zero

Refer 27.

Disable IA50

Enable IA51

Tx Checksum

Refer 26.

Disable IA60

Enable IA61

Verify Checksum

The checksum is made the sum module 10 as the numberical values of all data digits.

Disable IBB0

Enable IBB1

ENTER

Industrial 2 of 5

Specific Adjustments

I082 Truncate Lead

(Range:00_{10}-255_{10})

I092 Truncate End

(Range:00_{10}- 255_{10})

I0A Min. Length

(Range:00_{10}- 255_{10})

I0B2 Max. Length

(Range:00_{10}- 255_{10})

I0C2 Insert0 Position

(Range:00_{10}- 255)

I0D2 Insert1 Positionh

(Range:00_{10}- 255_{10})

I0EB Insert0 Data

(Range:00_{16}-FF_{16} ASCII Code)

I10B Insert1 Data

(Range:00_{16}-FF_{16} ASCII Code)

I12B ID

(Range:00_{16}-FF_{16} ASCII Code)

Refer 27, 35.

Matrix 2 of 5

END

Format

Data Digits (Variable)	Checksum (Optional)

Read

Disable JA70

Enable JA71

Truncate Zero

Refer 27.

Disable JA50

Enable JA51

Tx Checksum

Refer 26.

Disable JA60

Enable JA61

Verify Checksum

The checksum is made the sum module 10 as the numberical values of all data digits.

Disable JBB0

Enable JBB1

ENTER

Matrix 2 of 5

Specific Adjustments

J082 Truncate Lead
(Range:00_{10}-255_{10})

J092 Truncate End
(Range:00_{10}-255_{10})

J0A2 Min. Length
(Range:00_{10}-255_{10})

J0B2 Max. Length
(Range:00_{10}-255_{10})

J0C2 Insert0 Position
(Range:00_{10}-255_{10})

J0D2 Insert1 Positionh
(Range:00_{10}-255_{10})

J0EB Insert0 Data
(Range:00_{16}-FF_{16} ASCII Code)

J10B Insert1 Data
(Range:00_{16}-FF_{16} ASCII Code)

J12B ID
(Range:00_{16}-FF_{16} ASCII Code)

Refer 27 35.

Codabar/NW7

END

Format

Start	Data Digits (Variable)	Cheksum (Optional)	End

Read

Disable GA70

Enable GA71

Type

The Codabar has four kinds of Start/End patten, you may choice one to match your application.

ABCD/ABCD GB90

abcd/abcd GB91

ABCD/TN*E GB92

abcd/tn*e GB93

Same Start/End Pair

Sometimes, the Codabar requires only same Start/End patten can be decoded.

Disable GA00

Enable GA01

Tx Start/End

You can transmit all data digits including Start/End by set Enable.

Disable GA20

Enable GA21

Verify Checksum

The checksum is made as the sum module 16 of the numberical values of all data digits.

Disable GBB0

Enable GBB1

ENTER

Codabar/NW7

Tx Checksum

GA60 **Disable**

GA61 Enable

Refer 26.

Truncate Zero

GA50 **Disable**

GA51 Enable

Refer 27.

Codabar/NW7

END

Refer 27, 35.

Specific Adjustments

Truncate Lead G082

(Range:00_{10}-255_{10})

Truncate End G092

(Range:00_{10}-255_{10})

Min. Length G0A2

(Range:00_{10}-255_{10})

Max. Length G0B2

(Range:00_{10}-255_{10})

Insert0 Position G0C2

(Range:00_{10}-255_{10})

Insert1 Positionh G0D2

(Range:00_{10}-255_{10})

Insert0 Data G0EB

(Range:00_{16}-FF_{16} ASCII Code

Insert1 Data G10B

(Range:00_{16}-FF_{16} ASCII Code

ID G12B

(Range:00_{16}-FF_{16} ASCII Code)

ENTER

Code-128

Read

FA70 Disable

FA71 **Enable**

Format

Data Digits (Variable)	Checksum (Optional)

Type

FB90 **Standard**

FB91 UCC-128

FB92 GS1-128

The Code-128 can be translated to UCC-128 format if it starts with FNC1 character. The first FNC1 will be translated to "]C1", and next to be a concatenation code as <GS>($7F_{16}$).

]C1	Datas	<GS>	Datas	Checksum

Verify Checksum

FBB0 Disable

FBB1 **Enable**

The checksum is presented as the sum module 103 of all data digits.

Tx Checksum

FA60 Disable

FA61 **Enable**

Refer □26.

Truncate Zero

FA50 **Disable**

FA51 Enable

Refer □27.

END

Specific Adjustments

Truncate Lead F082
(Range:00_{10}-255_{10})

Truncate End F092
(Range:00_{10}-255_{10})

Min. Length F0A2
(Range:00_{10}-255_{10})

Max. Length F0B2
(Range:00_{10}-255_{10})

Insert0 Position F0C2
(Range:00_{10}-255_{10})

Insert1 Positionh F0D2
(Range:00_{10}-255_{10})

Insert0 Data F0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data F10B
(Range:00_{16}-FF_{16} ASCII Code)

ID F12B
(Range:00_{16}-FF_{16} ASCII Code)

Sub ID F14B
(Range:00_{16}-FF_{16} ASCII Code)

Connection Data F16B
(Range:00_{16}-FF_{16} ASCII Code)

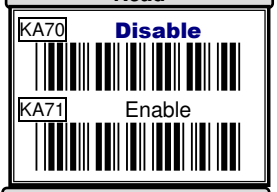
Refer □27, □35.

Connection data: This content is ASCII (Hex). If the content is NULL the display setting is "<GS>". If you want to setup your own content please refer to ASCII(Hex) list.

ENTER

Code-93

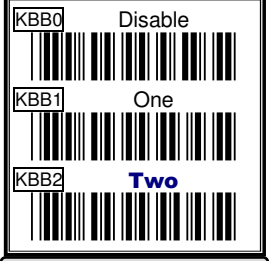
Read



Format

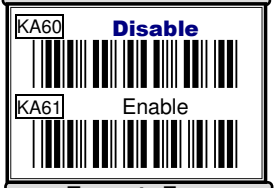
Data Digits (Variable)	Checksum1 (Optional)	Checksum2 (Optional)

Verify Checksum



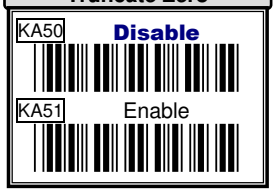
The checksum is presented as the sum module 47 of all data digits.

Tx Checksum



Refer 26.

Truncate Zero



Refer 27.

Code-93

END

Refer 27, 35.

Specific Adjustments

Truncate Lead K082
(Range:00_{10}-255_{10})

Truncate End K920
(Range:00_{10}-255_{10})

Min. Length K0A2
(Range:00_{10}-255_{10})

Max. Length K0B2
(Range:00_{10}-255_{10})

Insert0 Position K0C2
(Range:00_{10}-255_{10})

Insert1 Positionh K0D2
(Range:00_{10}-255_{10})

Insert0 Data K0EB
(Range:00_{16}-FF_{16} ASCII Code

Insert1 Data K10B
(Range:00_{16}-FF_{16} ASCII Code

ID K12B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

Code-11

Read

LA70 **Disable**

LA71 Enable

Format

Data Digits (Variable)	Checksum1 (Optional)	Checksum2 (Optional)

Verify Checksum

LBB0 Disable

LBB1 One

LBB2 **Two**

The checksum is presented as the sum module 11 of all data digits.

Tx Checksum

LA60 **Disable**

LA61 Enable

By setting Enable, checksum1 and checksum2 will be transmitted by the way you set on the checksum verificvation.

Truncate Zero

LA50 **Disable**

LA51 Enable

Refer 27.

Code-11

END

Refer 27, 35.

Specific Adjustments

Truncate Lead L082
(Range:00_{10}-255_{10})

Truncate End L920
(Range:00_{10}-255_{10})

Min. Length L0A2
(Range:00_{10}-255_{10})

Max. Length L0B2
(Range:00_{10}-255_{10})

Insert0 Position L0C2
(Range:00_{10}-255_{10})

Insert1 Positionh L0D2
(Range:00_{10}-255_{10})

Insert0 Data L0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data L10B
(Range:00_{16}-FF_{16} ASCII Code)

ID L12B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

MSI/Plessey

Read

MA70 **Disable**

MA71 Enable

Format

Data Digits (Variable)	Checksum1 (Optional)	Checksum2 (Optional)

Verify Checksum

MBB0 Disable

MBB1 **Mod 10**

MBB2 Mod 10/10

MBB3 Mod 11/10

The MSI/Plessey has one or two optional checksum characters. The checksum is presented by 3 kinds of method as Mod 10, Mod 10/10 and Mod 11/10. The checksum1 and checksum2 will be calculated as the sum module 10 or 11 of the data digits.

Tx Checksum

MA60 **Disable**

MA61 Enable

Refer 26.

Truncate Zero

MA50 **Disable**

MA51 Enable

Refer 27.

MSI/Plessey

END

Refer 27, 35.

Specific Adjustments

Truncate Lead M082

(Range:00_{10}-255_{10})

Truncate End M092

(Range:00_{10}-255_{10})

Min. Length M0A2

(Range:00_{10}-255_{10})

Max. Length M0B2

(Range:00_{10}-255_{10})

Insert0 Position M0C2

(Range:00_{10}-255_{10})

Insert1 Positionh M0D2

(Range:00_{10}-255_{10})

Insert0 Data M0EB

(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data M10B

(Range:00_{16}-FF_{16} ASCII Code)

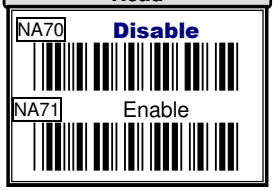
ID M12B

(Range:00_{16}-FF_{16} ASCII Code)

ENTER

UK/Plessey

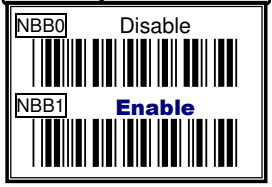
Read



Format

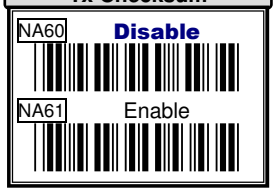
Data Digits (Variable)	Checksum1+2 (Optional)

Verify Checksum



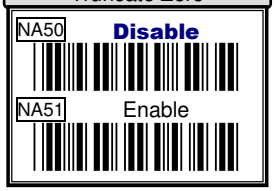
Refer 26.

Tx Checksum



Refer 26.

Truncate Zero



Refer 27.

UK/Plessey

END

Refer 27, 35.

Specific Adjustments

Truncate Lead N082
(Range:00_{10}-255_{10})

Truncate End N092
(Range:00_{10}-255_{10})

Min. Length N0A2
(Range:00_{10}-255_{10})

Max. Length N0B2
(Range:00_{10}-255_{10})

Insert0 Position N0C2
(Range:00_{10}-255_{10})

Insert1 Position N0D2
(Range:00_{10}-255_{10})

Insert0 Data N0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data N10B
(Range:00_{16}-FF_{16} ASCII Code)

ID N12B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

Telepen

Read

OA70 **Disable**

OA71 Enable

Format

Data Digits (Variable)	Checksum (Optional)

Type

OB90 **Numeric**

OB91 ASCII

OB92 Auto Switching

A Telepen can be transimtted by Numeric and ASCII format. Characters can be mixed the both format into the Telepen barcode. By setting Auto Switching, datas can be conversed between Numeric and Full ASCII by character <DLE>($7F_{16}$) automatically.

Verify Checksum

OBB0 **Disable**

OBB1 Enable

Refer □26.

Tx Checksum

OA60 **Disable**

OA61 Enable

Refer □26.

Truncate Zero

OA50 **Disable**

OA51 Enable

Refer □27.

Telepen

END

Refer 27, 35.

Specific Adjustments

Truncate Lead O082
(Range:00_{10}-255_{10})

Truncate End O920
(Range:00_{10}-255_{10})

Min. Length O0A2
(Range:00_{10}-255_{10})

Max. Length O0B2
(Range:00_{10}-255_{10})

Insert0 Position O0C2
(Range:00_{10}-255_{10})

Insert1 Positionh O0D2
(Range:00_{10}-255_{10})

Insert0 Data O0EB
(Range:00_{16}-FF_{16} ASCII Code)

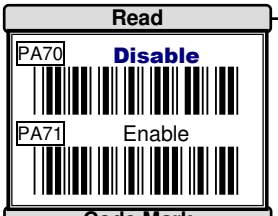
Insert1 Data O10B
(Range:00_{16}-FF_{16} ASCII Code)

ID O12B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

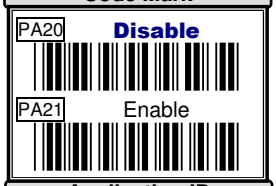
RSS14

Read



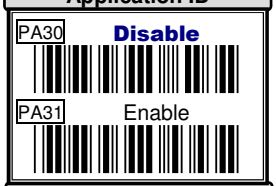
RSS code has a new name as : **GS1 databar**

Code Mark



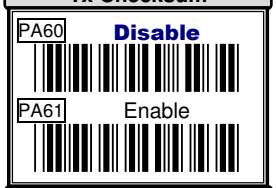
If you want **]e0** to be output, then please set up the Code Mark as Enable.

Application ID



If you want **01** to be output, then pleaswe set up the Application ID as **Enable**.

Tx Checksum



Refer 26.

Truncate Zero

Refer 27.

END

Specific Adjustments

Refer 27, 35.

Truncate Lead P082
(Range:00_{10}-255_{10})

Truncate End P092
(Range:00_{10}-255_{10})

Insert0 Position P0C2
(Range:00_{10}-255_{10})

Insert1 Positionh P0D2
(Range:00_{10}-255_{10})

Insert0 Data P0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data P10B
(Range:00_{16}-FF_{16} ASCII Code)

ID P12B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

RSS14 Limited

READ

QA70 **Disable**

QA71 Enable

Code Mark

QA20 **Disable**

QA21 Enable

If you want the **]e0** to be output, then please set the Code Mark as **Enable**.

Application ID

QA30 **Disable**

QA31 Enable

If you want the **01** to be output, then please set the Application ID as **Enable**.

Tx Checksum

QA60 **Disable**

QA61 Enable

Refer 26.

Truncate Zero

QA50 **Disable**

QA51 Enable

Refer 27.

END

Refer 27, 35.

Specific Adjustments

Truncate Lead Q082
(Range:00_{10}-255_{10})

Truncate End Q092
(Range:00_{10}-255_{10})

Insert0 Position Q0C2
(Range:00_{10}-255_{10})

Insert1 Positionh Q0D2
(Range:00_{10}-255_{10})

Insert0 Data Q0EB
(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data Q10B
(Range:00_{16}-FF_{16} ASCII Code)

ID Q12B
(Range:00_{16}-FF_{16} ASCII Code)

ENTER

RSS14 Stacked

READ

RA70 **Disable**

RA71 Enable

Code Mark

RA20 **Disable**

RA21 Enable

If you want **]e0** to be output, then please set up the Code Mark as **Enable**.

Application ID

RA30 **Disable**

RA31 Enable

If you want **01** to be output, then please set up the Application ID as **Enable**.

Tx Checksum

RA60 **Disable**

RA61 Enable

Refer 26.

Truncate Zero

RA50 **Disable**

RA51 Enable

Refer 27.

RSS14 Stacked

END

Refer 27, 35..

Specific Adjustments

Truncate Lead R082

(Range:00_{10}-255_{10})

Truncate End R092

(Range:00_{10}-255_{10})

Insert0 Position R0C2

(Range:00_{10}-255_{10})

Insert1 Positionh R0D2

(Range:00_{10}-255_{10})

Insert0 Data R0EB

(Range:00_{16}-FF_{16} ASCII Code)

Insert1 Data R10B

(Range:00_{16}-FF_{16} ASCII Code)

ID R12B

(Range:00_{16}-FF_{16} ASCII Code)

ENTER

Preamble/Postamble

Tx Preamble

8C60 Disable

8C61 **Enable**

By setting Enable, Preamble will be appended in front of the barcode. Refer to String Output Flowchart on 5.

Preamble Data

830D Data

(Range:00_{16}-FF_{16} ASCII Code)

There is One control digit can be programmed as Preamble. It will be appended automatically when each barcode is decoded.

Tx Postamble

8C70 Disable

8C71 **Enable**

By setting Enable, Postamble will be appended after the barcode. Refer to String Output Flowchart on 5.

Postamble Data

838D Data

(Range:00_{16}-FF_{16} ASCII Code)

Generally, your application need to append a carriage return character to finish data transmission. Or you may set the Postamble to be Disable to have your application without any control characters apppended after data transmission. The factory default of Postamble Data is <CR>($0D_{16}$) and <LF>($0A_{16}$).

Example Append the code "@" after each barcode transimitted.

1) **ENTER**⇨ Entry Programming

2) **Tx Postamble**⇨ Enable Postamble Transmission

3) **Postamble Data**⇨4⇨0⇨ **SET**⇨Postamble Data "@"

"@"

4) **END** Exit Programming

Prefix/Suffix

END

Prefix Data

Data 820D

(Range:00_{16}-FF_{16} ASCII Code)

The Prefix data can be set up to 8 characters. The string of Prefix data will be behind the Preamble data and before the barcode data.

Suffix Data

Data 828D

(Range:00_{16}-FF_{16} ASCII Code)

The Suffix data can be set up to 8 characters. The string of Suffix data will be be behind the barcode data and before the Postamble data. Refer String output Flowchart on page 5.

Example Append a string "**ABCD**" after each barcode transmission

1) ENTER⇨Programming entry

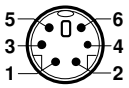
2) SuffixData⇨4⇨1⇨4⇨2⇨4⇨3⇨4⇨4⇨SET⇨Suffix Data "ABCD"

"A" "B" "C" "D"

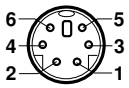
3) End Exit Programming

Cable Type

IBM PC, XT, AT & PS/2		
Function	6p Mini Din(M)	6p Mini Din(F)
Clock (Host)	5	---
Data (Host)	1	---
Clock (KBD.)	---	5
Data (KBD.)	---	1
Ground	3	3
GND Shield	3	3
VCC (+5V)	4	4

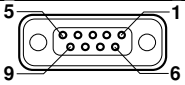


5p Mini Din(M)



6p Mini Din(F)

RS-232		
Function	9p D-Sub(F)	DC Jack(M)
TxD	2	...
RxD	3	...
RTS	8	...
CTS	7	...
Shorted	4,6	...
Ground	5	2
GND Shield	5	2
VCC (+5V)	9	1



9p D-Sub(F)

DC Jack(M)

Test Chart

UPC-A

EAN-13 (ISBN) with Add-on 5

(ISBN: 9572216678)

Code-39 (Full ASCII Code)

(Full ASCII Code: *CODE39 Test*)

Interleaved 2 of 5

Code-93

Code-128 (C Type)

(UCC/EAN-128:)C10123456789e)

Test Chart

MSI/Plessey

1 0 5 5 8 3 0 2 5

Telepen

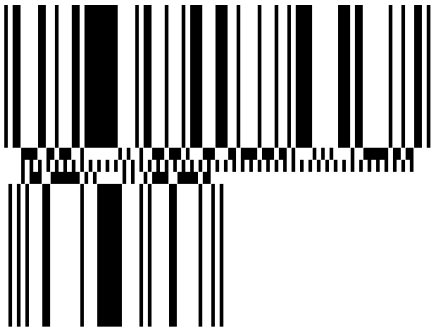
T E L E P E N T e s t +

(Numeric: 57424942534251055774888916)

RSS14

(01)20012345678909

RSS Expansion Stacked



(01) 0 0614141 00001 2

ASCII Code Table

H / L	0 (*)	1 (*)	0	1
0	Null		NUL	DLE
1	Up	F1	SOH	DC1
2	Down	F2	STX	DC2
3	Left	F3	ETX	DC3
4	Right	F4	EOT	DC4
5	PgUp	F5	ENQ	NAK
6	PgDn	F6	ACK	SYN
7		F7	BEL	ETB
8	Bs	F8	BS	CAN
9	Tab	F9	HT	EM
A		F10	LF	SUM
B	Home	Esc	VT	ESC
C	End	F11	FF	FS
D	Enter	F12	CR	GS
E	Insert	Ctrl+	SO	RS
F	Delete	Alt+	SI	US

(*) For keyboard wedge only.

H / L	2	3	4	5	6	7
0	SP	0	@	P	`	p
1	!	1	A	Q	a	q
2	“	2	B	R	b	r
3	#	3	C	S	c	s
4	$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	‘	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	\	l	|
D	-	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	DEL