RA1001 Series Barcode Scanner

User Manual

Version: MD_UM_EN_V3.1.5R

Warning: Ensure that the optional DC adapter works at +5V, especially for the RS-232 interface cable.

NOTICE:

1. All software, including firmware, furnished to the user is on a licensed basis.
2. The right is reserved to make changes to any software or product to improve reliability, function, or design.
3. The material in this manual is subject to change without notice.
4. A standard packing includes a scanner, a PS2 cable and a CD (or a user manual). Accessories include a stand, a RS-232 cable, a 5V adaptor and a USB cable.

Contents

Technical specifications

Table 1 Technical specifications

Input voltage	5 VDC ± 0.25V
Power	500 mW (Operating); 950 mW (Max.)
Current	100 mA (Operating); 190 mA (Max.)
Standby current	<250μA
Laser	650nm laser diode
Laser safety	EN60825-1, Class 1
Decoding rate	200 times/sec
Scanning angle	±60°, ±65°, ±42° (Skew, Pitch, Roll)
Min. element width	0.127mm (5mil) for Long-Range series; 0.076mm (3mil) for High-Density series
Decode capability	UPC-A, UPC-E, EAN-13, EAN-8, ISBN/ISSN, Code 39, Code 39 full ASCII, Code 32, Trioptic Code 39, Interleaved 2 of 5, Industrial 2 of 5, Matrix 2 of 5, Codabar(NW7), Code 128, Code 93, Code 11(USD-8), MSI/Plessey, UK/Plessey, UCC/EAN 128, China Post, China Finance, GS1 DataBar (formerly RSS) variants
Indicator	Beeper, LED
Interface supported	Keyboard wedge, RS-232, USB
Operating mode	Hand-held, Auto-detection (Optional)
Dimensions	Height × Width × Depth: 9.5cm × 6.7cm × 15.4cm
Weight	148g, without cable
Cable	Straight 2.0m
Connector type	RJ-45 phone jack connector
Case material	ABS + PC
Temperature	0° to 50°C (32° to 120°F), Operating; -40° to 60°C (-40° to 140°F), Storage
Humidity	5% to 95% (non-condensing)
Durability	Multiple 4.0m (13.1 ft) drops to concrete
Programming method	Manual (reading special barcode)
Program upgrade	Online

Default setting for each barcode

Table 2 Default setting for each barcode

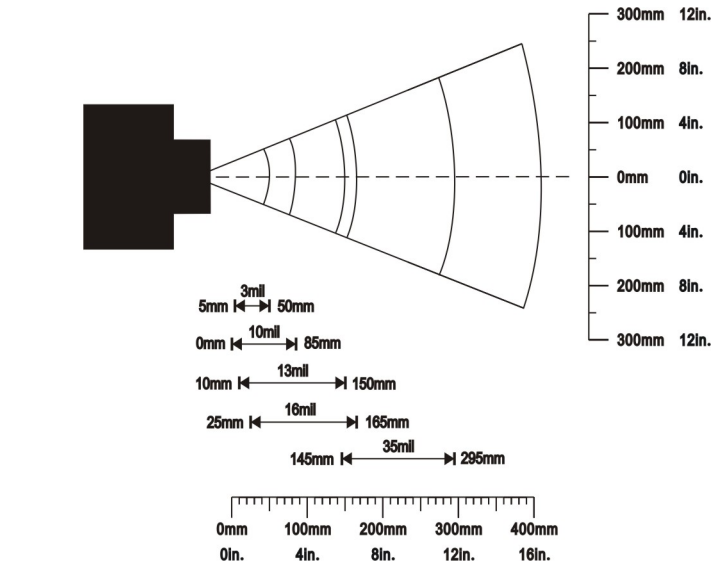
Code type	Read enable	Check digit verification	Check digit transmission	Min. code length	Proprietary code ID	AIM code ID
UPC-A	√	√	√	(12)[2]	A	]Em
UPC-E	√	√	√	(8)[2]	D	]Em
EAN-13	√	√	√	(13)[2]	A	]Em
EAN-8	√	√	√	(8)[2]	C	]Em
ISBN/ISSN[1]	√	√	√	(13)[2]	A	]Em
Code 39	√	-	-	1	M	]Am
Interleaved 2 of 5	√	-	-	6	I	]Im
Industrial 2 of 5	√	-	-	4	H	]Im
Matrix 2 of 5	√	-	-	6	X	]Im
Codabar	√	-	-	4	N	]Fm
Code 128	√	√	-	1	K	]Cm
Code 93	√	√	-	1	L	]Gm
Code 11	-	√	-	4	V	-
MSI/Plessey	√	-	-	4	O	]Mm
UK/Plessey	√	√	-	1	U	]Mm
UCC/EAN 128	√	√	-	1	K	]Cm
China Post	√	-	-	(11)[2]	T	]Im
China Finance	√	-	-	(10)[2]	Y	-
GS1 DataBar	-	-	-	(16)[2]	R	]em
GS1 DataBar Truncated[3]	-	-	-	(16)[2]	R	]em
GS1 DataBar Limited	-	-	-	(16)[2]	R	]em
GS1 DataBar Expanded	-	-	-	1	R	]em
PDF417	-	-	-	1	P	]Lm
MicroPDF417	-	-	-	1	P	]Lm

Note: [1]The settings for ISBN/ISSN and EAN-13 must be the same.

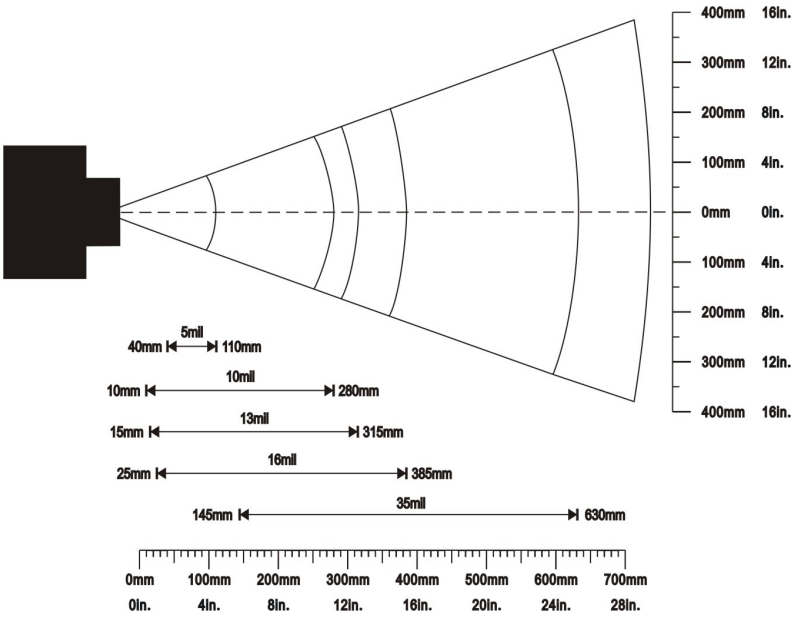
[2] Fixed-length barcodes.

[3]The settings for GS1 DataBar Truncated and GS1 DataBar must be the same.

Decode zone

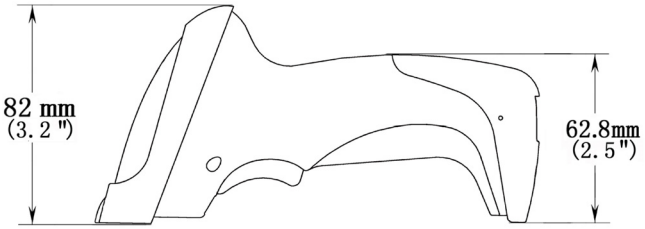


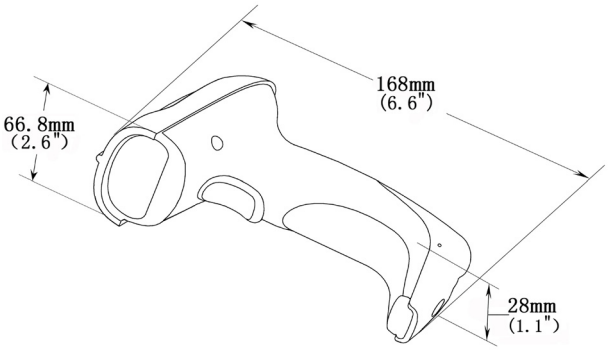
High-Density series

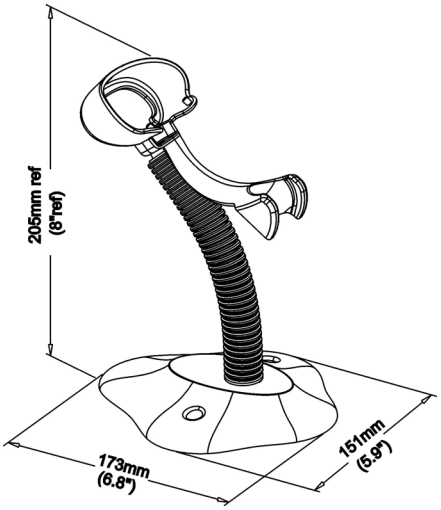


Long-Range series

Dimensions


82 mm
(3.2")
62.8mm
(2.5")


168mm
(6.6")
66.8mm
(2.6")
28mm
(1.1")


205mm ref
(8"ref)
173mm
(6.8")
151mm
(5.9")

Parts of the scanner

Figure 1

① Exit window

② LED

③ Trigger

④ Cable interface port

⑤ Release-hole of the cable

Figure 2

Remove the interface cable:

1. Find the release-hole.
2. Insert a thin wire into the hole and pull out the cable gently.

Introduction to installation

Note: If any of the below operation is incorrect, turn off the power immediately and check the scanner for any improper connections. Go through all steps again.

Installation - keyboard wedge

1. Switch off the host and unplug the keyboard connector.
2. Attach the modular connector of the Y-cable to the cable interface port on the scanner.
3. Connect the round male DIN host connector of the Y-cable to the keyboard port on the host device.
4. Connect the round female DIN keyboard connector of the Y-cable to the keyboard.
5. Ensure that all connections are secure.
6. Switch on the host system.

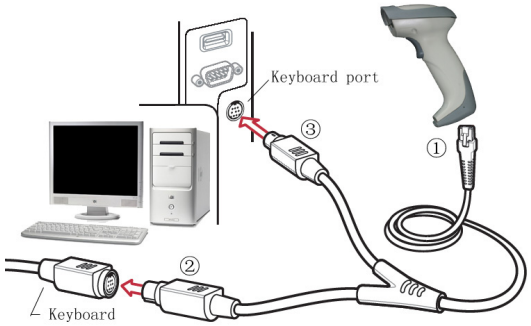


Figure 3

Installation - RS-232

1. Connect the RS-232 interface cable to the bottom of the scanner.
2. Connect the other end of the interface cable to the serial port on the host. Tighten the two screws to secure the connector to the port.
3. If the host does not have power supply (on PIN 9), connect the external power supply (DC adapter) to the RS-232 cable.

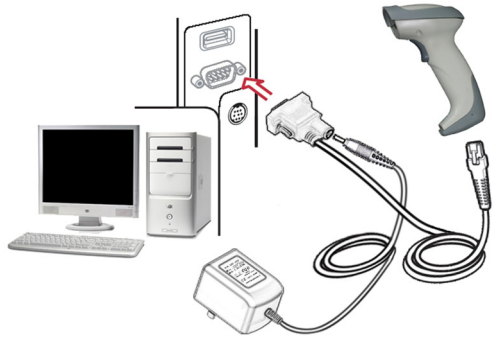


Figure 4

Installation - USB

The scanner attaches directly to a USB host, and is powered by it. No additional power supply is required.

1. Refer to Figure 4, connect the USB interface cable to the bottom of the scanner.
2. Plug the series A connector in the USB host, or an available port of the terminal.
3. Windows will automatically detect the USB device.

Scanning modes

The scanner has two scanning modes: hand-held and auto-detection. When the scanner is scanning, ensure the scan line crosses every bar and space of the symbol.

RIGHT

WRONG

Figure 5

The auto-detection scanning mode has two operating modes: in-stand and always ON. The following is an introduction to in-stand auto-detection mode.

1. When the scanner is seated in the stand, the scanner operates in auto-detection mode (see Figure 6). When scanner is removed from the stand, it operates in its normal hand-held mode.
2. To scan a bar code, present the bar code and ensure the scan line crosses every bar and space of the symbol.
3. Upon successful decode, the scanner beeps and the LED lights.
4. When the laser light is off, the present bar code must be removed to active next scanning.

Figure 6

Programming instruction

Refer to the next page, the steps of programming are:

1. Scan the **SETUP** bar code on the parameter setting part.
2. Enter the option mode by scanning the **Option bar code**.
3. To the right of the option barcode, the necessary alphanumeric inputs are listed. Scan these alphanumeric entries.
4. Scan the **END** bar code, listed on the lower right hand corner of each parameter setting part.
5. **Notes that only one parameter can be setup at each time.**
6. During the process of programming, LED is lighting to indicate the programming correctness. LED will go off if any incorrect programming operation performed.
7. After each successful programming, LED will go off and the scanner will beep twice.
8. Throughout the programming bar code menus, **the factory default settings are indicated with asterisks (*).**

Example: to set Flow control to be XON/XOFF.

Steps: Scan the following barcodes in order.

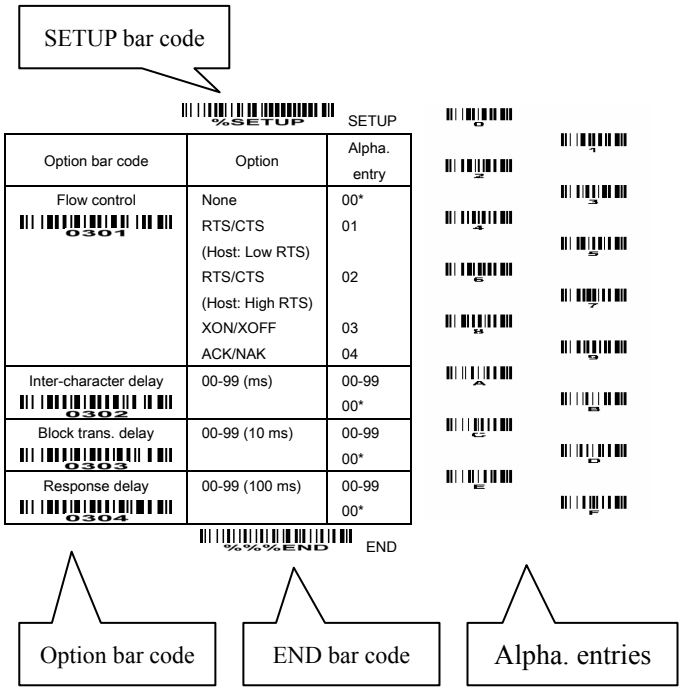


Figure 7

Interface selection

This scanner supports interfaces such as keyboard wedge, RS-232 serial wedge, and USB interface. In most of the cases, simply selecting an appropriate cable provided by the manufacturer will work for a specific interface.

Interface selection:

Auto detection-By setting this function, the scanner will automatically detect the keyboard wedge, RS-232 or USB interface for user.

SETUP

Option bar code	Option	Alpha. entry
Interface selection 	Auto detection (Keyboard wedge /RS-232/USB)	00*
	Keyboard wedge	01
	RS-232	02
	USB	03

END

Keyboard wedge

Keyboard type: As a keyboard interface, the scanner supports most of the popular PCs and IBM terminals.

Keyboard layout: The scanner supports different national keyboard layouts.

Clock period: According to the PS2 protocol, the clock is provided by the device, e.g. keyboard or scanner, with the period between 60us to 100us.

Delay-after-compound-key: In some rare occasions, machine with low speed PS2 communication port would require a free time gap following the press/release of the compound key (Shift, Ctrl or Alt).

Numeric key:

Alphabetic key- the scanner will output code result as alphabetic key.

Numeric key- the scanner will output code result as pressing numeric keypad ('0', '1', '2', '3', '4', '5', '6', '7', '8', '9', '.', '+', '-', '/', '*' only).

Alt+ keypad- the scanner will output code result as pressing Alt+ numeric key (on keypad). Note that the Num Lock control key must be ON. This setting can be specially adapted for use with different national keyboard layout.

Power-on simulation: All of the PCs check the keyboard status during power-on self test. It simulates keyboard timing and passes keyboard present status to the PC during power-on.

Inter-character delay: This delay is inserted after each data character transmitted.

Inter-byte delay: This delay is inserted after each byte transmitted. Normally a character is comprised of three or above bytes.

Block trans. delay: It is a delay timer between barcode data output. This feature is used to transfer continually with shorter barcode data.

Caps Lock status: By selecting *Caps Lock "ON"* or *Caps Lock "OFF"*, the scanner will output data string based on the information on the Caps Lock status.

Caps Lock override: If this function is enabled, on AT or AT notebook hosts, the keyboard ignores the state of the Caps Lock key. Therefore, an 'A' in the bar code is sent as an 'A' no matter what the state of the keyboard's Caps Lock key.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Keyboard type 0201	IBM AT, PS/2	00*
	Apple Mac compatibles	01
	Reserved	02
Keyboard layout 0202	USA	00*
	Turkish F	01
	Turkish Q	02
	French	03
	Italian	04
	Spanish	05
	Slovak	06
Clock period	60us	00

SETUP

Option bar code	Option	Alpha. entry
	70us	01
	80us	02*
	90us	03
	100us	04
	200us	05
Delay-after-compound-key 	0ms	00*
	10ms	01
	20ms	02
	40ms	03
	80ms	04
Numeric key 	Alphabetic key	00*
	Numeric keypad	01
	Alt+ keypad	02
Power-on simulation 	Disable	00*
	Enable	01
Inter-character delay 	0ms	00*
	5ms	01
	10ms	02
	20ms	03
	40ms	04
	80ms	05
Inter-byte delay 	1ms	00*
	2ms	01
	4ms	02
	8ms	03
Caps Lock status 	OFF	00*
	ON	01
Caps Lock override 	Disable	00*
	Enable	01
Reserved 		

END

RS-232 interface

Flow control:

None-The communication only uses TxD and RxD signals without any hardware or software handshaking protocol.

RTS/CTS-If the scanner wants to send the barcode data to host computer, it will issue the RTS signal first, wait for the CTS signal from the host computer, and then perform the normal data communication. If there is no replied CTS signal from the host computer after the timeout duration, the scanner will issue an error indication. By setting (Host idle: Low RTS) or (Host idle: High RTS), the scanner can be set to match the Serial Host RTS line.

XON/XOFF-An XOFF character turns the scanner transmission off until the scanner receives an XON character.

ACK/NAK-After transmitting data, the scanner expects either an ACK (acknowledge) or NAK (not acknowledge) response from the host. When a NAK is received, the scanner transmits the same data again and waits for either an ACK or NAK. After three unsuccessful attempts to send data when NAKs are received, the scanner issues an error indication and discards the data.

Inter-character delay: Refer to Inter-character delay of Keyboard wedge.

Response delay: This delay is used for serial communication of the scanner when it waits for a handshaking acknowledgment from the host.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Flow control 0301	None	00*
	RTS/CTS (Host idle: Low RTS)	01
	RTS/CTS (Host idle: High RTS)	02
	XON/XOFF	03
	ACK/NAK	04
Inter-character delay 0302	0ms	00*
	5ms	01
	10ms	02
	20ms	03
	40ms	04
	80ms	05
Reserved 0303		
Response delay 0304	00-99 (100ms)	00-99
		00*
Baud rate 0305	300	00
	600	01
	1200	02
	2400	03
	4800	04
	9600	05*
	19200	06
	38400	07
	57600	08
	115200	09
Parity 0306	None	00*
	Odd	01
	Even	02
Data bit 0307	8 bits	00*
	7 bits	01
Stop bit 0308	One bit	00*
	Two bits	01

%%%END END

Hand-held scan & some global settings

Scanning mode:

Good-read off-The trigger button must be pressed once to activate scanning. The light source of scanner stops scanning when there is a successful reading or no code is decoded after the Stand-by duration elapsed.

Momentary-The trigger button acts as a switch. Press button to activate scanning and release button to stop scanning. The light source of scanner stops scanning when there is a successful reading or no code is decoded after the Stand-by duration elapsed.

Alternate-The trigger button acts as a toggle switch. Press button to activate or stop scanning.

Continue-The scanner always keeps scanning, and it does not matter when the trigger button is pressed or duration is elapsed.

Timeout off-The trigger button must be pressed once to activate scanning. The light source of scanner stops scanning when no code is successful decoded after the Stand-by duration elapsed.

Same barcode delay time: If a barcode has been scanned and output once successfully, the laser beam must be off or moved away from the barcode beyond delay time to active scanning the same barcode. When this feature is set to be “0xFF”, then the delay time is indefinite.

Double confirm: If it is enabled, the scanner will require a several times of same-decoded-data to confirm a valid reading.

Global Max./Min. code length: These two lengths are defined as the valid range of decoded barcode data length. Make sure that the minimum length setting is no greater than the maximum length setting, or otherwise the labels of the symbology will not be readable. In particular, the same value can be set for both minimum and maximum reading length to force the fixed length barcode decoded.

Notes:

1. Please set the max./min. length for individual barcode in later sections, if special demand is requested.
2. The number of check digits is included in max./min. code length.
3. These two settings have no effect on the symbologies with fixed-length, e.g. UPC-A, UPC-E, EAN-13, EAN-8 and China Post.

Global G1-G6 string selection: The scanner offer one or two string group for ALL symbologies. By setting one or two digits to indicate which string group you want to apply. You may refer to the chapters of “String setting” and “String position & Number of truncated leading/ending character”.

Example: Group 1 → set 01 or 10. Group 2 and 4 → set 24 or 42.

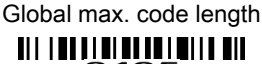
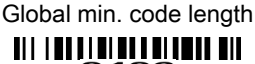
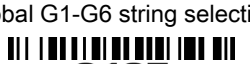
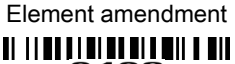
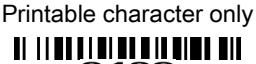
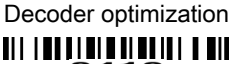
All valid settings include 00, 01, 02, 03, 04, 05, 06, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 30, 31, 32, 33, 34, 35, 36, 40, 41, 42, 43, 44, 45, 46, 50, 51, 52, 53, 54, 55, 56, 60, 61, 62, 63, 64, 65 and 66.

Element amendment: If it is enabled, the scanner can read the barcode comprised with bars and spaces in different scale.

Printable character only: If it is enabled, the scanner will output the printable characters only, i.e. in ASCII from 20H to 7EH.

Decoder optimization: If it is enabled, the scanner will optimize the decoder with error correction. This function is not effective for all types of barcodes.

SETUP

Option bar code	Option	Alpha. entry
Scanning mode 	Good-read off Momentary Alternate Continue Timeout off	00 01* 02 03 04
Standby duration 	01-99 (second)	01-99 04*
Same barcode delay time 	00-FF_{16} (50ms)	00-FF_{16} 08*
Double confirm 	00-09 (00: no)	00-09 00*
Global max. code length 	04-99	04-99 99*
Global min. code length 	01-99	01-99 04*
Global G1-G6 string selection 	00-66	00-66 00*
Element amendment 	Disable Enable	00 01*
Printable character only 	Disable Enable	00* 01
Decoder optimization 	Disable Enable	00 01*
Reserved 		

END

Indication

Power on alert: After power-on the scanner will generate an alert signal to indicate a successful self-test.

LED indication: After each successful reading, the LED above the scanner will light up to indicate a good barcode reading.

Beeper indication: After each successful reading, the scanner will beep to indicate a good barcode reading, and its beep tone duration is adjustable.

Beep tone duration: This parameter can be adjusted for a good reading upon favorite usage.

SETUP

Option bar code	Option	Alpha. entry
Power on alert 	Disable Enable	00 01*
LED indication 	Disable Enable	00 01*
Beeper indication 	Disable Enable	00 01*
Beep tone duration 	01-09 (10ms)	01-09 05*

END

Auto-detection scan

Auto-detect sensor: By setting Enable, the scanner will start operating if any nearby object has been detected. The laser light of scanner stops scanning when there is a successful reading or no code is decoded after the Stand-by duration elapsed. Once the laser light stops scanning, the present object must be removed to enable Auto-detect sensor.

Operating mode:

In stand-The scanner must be placed in the stand to enable Auto-detect sensor.

Always ON-Auto-detect sensor is enabled regardless of the placement of the scanner.

SETUP

Option bar code	Option	Alpha. entry
Auto-detect sensor 	Disable Enable	00 01*
Operation mode 	In stand Always ON	00* 01
Stand-by duration 	00-99 (second)	00-99 04*

END

UPC-A

Read: Format

Leading zero	Data digits (11 digits)	Check digit

Check digit verification: The check digit is optional.

Check digit trans.: By setting Enable, check digit will be transmitted.

Code ID setting: Code ID is a one-or-two-character string used to represent the symbol upon a succeeding reading. If you want application to transmit Code ID, you must set Code ID transmission to be enabled. Refer to the chapter of String transmission.

Insertion group selection: Refer to Global insertion group selection of the chapter of Hand-held scan & some global settings.

Supplement digits: The Supplement digits barcode is the supplemental 2 or 5 characters.

Format

Leading zero	Data digits (11 digits)	Check digit	Supplement digits 2 or 5

Truncation/Expansion:

Truncate leading zeros- The leading “0” digits of UPC-A data characters can be truncated when the feature is enabled.

Expand to EAN-13- It extends to 13-digits with a “0” leading digit when the feature is enabled.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 1101	Disable Enable	00 01*
Check digit verification 1102	Disable Enable	00 01*
Check digit trans. 1103	Disable Enable	00 01*
Code ID setting 1104	00-FF_{16} (ASCII)	00-FF_{16} <A>*
Insert group selection 1105	00-66	00-66 00*
Supplement digits 1106	None 2 digits 5 digits 2 or 5 digits	00* 01 02 03
Truncation/Expansion 1107	None Truncate leading zeros Expand to EAN-13	00* 01 02
Reserved 1108		

%%%END END

UPC-E

Read: Format

Leading zero	Data digits (6 digits)	Check digits

Check digit verification: The check digit is optional and made as the sum of the numerical value of the data digits.

Check digit trans.: By setting Enable, check digit will be transmitted.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Supplement digits:

Format

Leading zero	Data digits (6 digits)	Check digit	Supplement digits 2 or 5

Truncation/Expansion:

Truncate leading zeros- Refer to Truncation/Expansion of UPC-A.

Expand to EAN-13- It extends to 13-digits with “0” digits when the feature is set to be enabled.

Example: Barcode “0123654”,

Output: “0012360000057”.

Expand to UPC-A- It extends to 12-digits when the feature is set to be enabled.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 1201	Disable	00
	Enable	01*
Check digit verification 1202	Disable	00
	Enable	01*
Check digit trans. 1203	Disable	00
	Enable	01*
Code ID setting 1204	00-FF_{16} (ASCII)	00-FF_{16} <D>*
Insert group selection 1205	00-66	00-66 00*
Supplement digits 1206	None	00*
	2 digits	01
	5 digits	02
	2 or 5 digits	03
Truncation/Expansion 1207	None	00*
	Truncate leading zeros	01
	Expand to EAN-13	02
	Expand to UPC-A	03
Reserved 1208		

%%%END END

EAN-13

Read:

Format

Data digits (12 digits)	Check digit

Check digit verification: The check digit is optional and made as the sum of the numerical value of the data digits.

Check digit transmission: By setting Enable, check digit will be transmitted.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Supplement digits:

Format

Data digits (12 digits)	Check digit	Supplement digits 2 or 5

ISBN/ISSN: The ISBN (International Standard Book Number) and ISSN (International Standard Serial Number) are two kinds of barcode for books and magazines. The ISBN is 10 digits with leading “978” and the ISSN is 8 digits with leading “977” of the EAN-13 symbology.

Example:

Barcode “9780194315104”, Output: “019431510X”.

Barcode “9771005180004”, Output: “10051805”.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 1301	Disable Enable	00 01*
Check digit verification 1302	Disable Enable	00 01*
Check digit transmission 1303	Disable Enable	00 01*
Code ID setting 1304	00-FF_{16} (ASCII)	00-FF_{16} <A>*
Insert group selection 1305	00-66	00-66 00*
Supplement digits 1306	None 2 digits 5 digits 2 or 5 digits	00* 01 02 03
ISBN/ISSN conversion 1307	Disable Enable	00* 01
Reserved 1308		

%%%END END

EAN-8

Read:

Format

Data digits (7 digits)	Check digit

Check digit verification: The check digit is optional and made as the sum of the numerical value of the data digits.

Check digit trans.: By setting Enable, check digit will be transmitted.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Supplement digits:

Format

Data digits (7 digits)	Check digit	Supplement Digits 2 or 5

Truncation/Expansion: Refer to Truncation/Expansion of UPC-A.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 1401	Disable	00
	Enable	01*
Check digit verification 1402	Disable	00
	Enable	01*
Check digit trans. 1403	Disable	00
	Enable	01*
Code ID setting 1404	00-FF_{16}	00-FF_{16}
	(ASCII)	<A>*
Insert group selection 1405	00-66	00-66
		00*
Supplement digits 1406	None	00*
	2 digits	01
	5 digits	02
	2 or 5 digits	03
Truncation/Expansion 1407	None	00*
	Truncate leading zero	01
	Expand to EAN-13	02
Reserved 1408		

%%%END END

Code 39

Read:

Format

⋆	Data digits (variable)	Check digit (optional)	⋆

Check digit verification: The check digit is optional and made as the sum module 43 of the numerical value of the data digits.

Check digit transmission: By setting Enable, check digit will be transmitted.

Max./Min. code length: Each symbology has own max./min. code length. If both setting of max./min. code length are "00"s, the setting of global max./min. code length is effective. The length is defined as to the actual barcode data length to be sent. Label with length exceeds these limits will be rejected. Make sure that the minimum length setting is no greater than the maximum length setting, or otherwise all the labels of the symbology will not be readable. In particular, you can see the same value for both minimum and maximum reading length to force the fixed length barcode decoded.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Start/End transmission: The start and end characters of Code 39 are "⋆"s. You can transmit all data digits including two "⋆"s.

"⋆" as data character: By setting Enable, "⋆" can be recognized as data character.

Convert Code 39 to Code 32: Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Note that Code 39 must be enabled in order for this parameter to function.

Format of Code 32

"A" (optional)	Data digits (8 digits)	Check digit

Code 32 Prefix "A" transmission: By setting Enable, the prefix character "A" can be added to all Code 32 barcodes.

Trioptic Code 39 read: Trioptic Code 39 is a variant of Code 39 used in the marking of magnetic tapes and computer cartridges. Trioptic Code 39 symbols always contain six characters.

Format

$	Data digits (6 digits)	$

Trioptic Code 39 Start/End transmission: The start and end characters of Trioptic Code 39 are "$"s. You can transmit all data digits including two "$"s.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 1501	Disable Enable	00 01*
Check digit verification 1502	Disable Enable	00* 01
Check digit transmission 1503	Disable Enable	00* 01
Max. code length 1504	00-99	00-99 00*
Min. code length 1505	00-99	00-99 01*
Code ID setting 1506	00-FF_{16} (ASCII)	00-FF_{16} <M>*
Insert group selection 1507	00-66	00-66 00*
Format 1508	Standard Full ASCII	00* 01
Start/End transmission 1509	Disable Enable	00* 01
“★” as data character 1510	Disable Enable	00* 01
Convert Code 39 to Code 32 1511	Disable Enable	00* 01
Code 32 Prefix “A” transmission 1512	Disable Enable	00* 01
Trioptic Code 39 read 1513	Disable Enable	00 01*
Trioptic Code 39 Start/End transmission 1514	Disable Enable	00* 01

%%%END END

Interleaved 2 of 5

Read:

Format

Data digits (Variable)	Check digit (optional)

Check digit verification: The check digit is made as the sum module 10 of the numerical values of all data digits. There are two optional check digit algorithms: the specified Uniform Symbology Specification (USS) and the Optical Product Code Council (OPCC).

Check digit transmission: By setting Enable, check digit will be transmitted.

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00 01*
Check digit verification 	Disable USS OPCC	00* 01 02
Check digit transmission 	Disable Enable	00* 01
Max. code length 	00-99	00-99 00*
Min. code length 	00-99	00-99 06*
Code ID setting 	$00\text{-}FF_{16}$ (ASCII)	$00\text{-}FF_{16}$ <I>*
Insert group selection 	00-66	00-66 00*
Reserved 		

END

Industrial 2 of 5

Read:

Format

Data digits (variable)	Check digit (optional)

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00 01*
Max. code length 	00-99	00-99 00*
Min. code length 	00-99	00-99 00*
Code ID setting 	00-FF_{16} (ASCII)	00-FF_{16} <H>*
Insert group selection 	00-66	00-66 00*
Reserved 		

END

Matrix 2 of 5

Read:

Format

Data digits (variable)	Check digit (optional)

Check digit verification: The check digit is made as the sum module 10 of the numerical values of all data digits.

Check digit transmission: By setting Enable, check digit will be transmitted.

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00 01*
Check digit verification 	Disable Enable	00* 01
Check digit transmission 	Disable Enable	00* 01
Max. code length 	00-99	00-99 00*
Min. code length 	00-99	00-99 06*
Code ID setting 	$00\text{-}FF_{16}$ (ASCII)	$00\text{-}FF_{16}$ <X>*
Insert group selection 	00-44	00-44 00*
Reserved 		

END

Codabar

Read:

Format

Start	Data digits (variable)	Check digit (optional)	End

Check digit verification: The check digit is made as the sum module 16 of the numerical values of all data digits.

Check digit transmission: By setting Enable, check digit will be transmitted.

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Start/End type: Codabar has four pairs of Start/End pattern; you may select one pair to match your application.

Start/End transmission: Refer to Start/End transmission of Code 39.

Start/End character equality: By setting Enable, the start and end character of a Codabar barcode must be the same.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 1901	Disable	00
	Enable	01*
Check digit verification 1902	Disable	00*
	Enable	01
Check digit transmission 1903	Disable	00*
	Enable	01
Max. code length 1904	00-99	00-99
		00*
Min. code length 1905	00-99	00-99
		00*
Code ID setting 1906	00-FF_{16}	00-FF_{16}
	(ASCII)	<N>*
Insert group selection 1907	00-66	00-66
		00*
Start/End type 1908	ABCD/ABCD	00*
	abcd/abcd	01
	ABCD/TN*E	02
	abcd/tn*e	03
Start/End transmission 1909	Disable	00*
	Enable	01
Start/End character equality 1910	Disable	00*
	Enable	01

%%%END END

Code 128

Read:

Format

Data digits (variable)	Check digit (optional)

Check digit verification: The check digit is made as the sum module 103 of all data digits.

Check digit transmission: By setting Enable, check digit will be transmitted.

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Truncate leading zeros: The leading “0” digits of Code 128 barcode characters can be truncated when the feature is enabled.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 2001	Disable Enable	00 01*
Check digit verification 2002	Disable Enable	00 01*
Check digit transmission 2003	Disable Reserved	00* 01
Max. code length 2004	00-99	00-99 00*
Min. code length 2005	00-99	00-99 01*
Code ID setting 2006	00-FF_{16} (ASCII)	00-FF_{16} <K>*
Insert group selection 2007	00-66	00-66 00*
Truncate leading zeros 2008	Disable All leading “0”s Only the first “0”	00* 01 02

%%%END END

Code 93

Read:

Format

Data digits (variable)	2 check digits (optional)

Check digit verification: The check digit is made as the sum module 47 of the numerical values of all data digits.

Check digit transmission: By setting Enable, check digit will be transmitted.

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 2101	Disable Enable	00 01*
Check digit verification 2102	Disable Enable	00 01*
Check digit transmission 2103	Disable Enable	00* 01
Max. code length 2104	00-99	00-99 00*
Min. code length 2105	00-99	00-99 01*
Code ID setting 2106	00-FF_{16} (ASCII)	00-FF_{16} <L>*
Insert group selection 2107	00-66	00-66 00*
Reserved 2108		

%%%END END

Code 11

Read:

Format

Data digits (variable)	Check digit 1 (optional)	Check digit 2 (optional)

Check digit verification: The check digit is presented as the sum module 11 of all data digits.

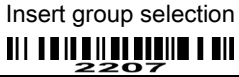
Check digit transmission: By setting Enable, check digit 1 and check digit 2 will be transmitted upon your selected check digit verification method.

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00 01*
Check digit verification 	Disable One digit Reserved Reserved	00 01* 02 03
Check digit transmission	Disable Enable	00* 01
Max. code length 	00-99	00-99 00*
Min. code length 	00-99	00-99 00*
Code ID setting 	00-FF_{16} (ASCII)	00-FF_{16} <V>*
Insert group selection 	00-66	00-66 00*
Reserved 		

END

MSI/Plessey

Read:

Format

Data digits (variable)	Check digit 1 (optional)	Check digit 2 (optional)

Check digit verification: The MSI/Plessey has one or two optional check digits. There are three methods of verifying check digits, i.e. Mod10, Mod10/10 and Mod 11/10. The check digit 1 and check digit 2 will be calculated as the sum module 10 or 11 of the data digits.

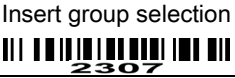
Check digit transmission: By setting Enable, check digit 1 and check digit 2 will be transmitted upon your selected check digit verification method.

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00* 01
Check digit verification 	Disable 1 digit (mod 10) Reserved Reserved	00* 01 02 03
Check digit transmission 	Disable Enable	00* 01
Max. code length 	00-99	00-99 00*
Min. code length 	00-99	00-99 00*
Code ID setting 	$00\text{-}FF_{16}$ (ASCII)	$00\text{-}FF_{16}$ <O>*
Insert group selection 	00-66	00-66 00*
Reserved 		

END

UK/Plessey

Read:

Format

Data digits (variable)	2 check digits (optional)

Check digit verification: The UK/Plessey has one or two optional check digits. The check digit 1 and check digit 2 will be calculated as the sum module 10 or 11 of the data digits.

Check digit transmission: By setting Enable, check digit will be transmitted.

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00* 01
Check digit verification 	Disable Enable	00 01*
Check digit transmission 	Disable Enable	00* 01
Max. code length 	00-99	00-99 00*
Min. code length 	00-99	00-99 01*
Code ID setting 	00-FF_{16} (ASCII)	00-FF_{16} <U>*
Insert group selection 	00-66	00-66 00*
Reserved 		

END

UCC/EAN 128

Read:

Format

Data digits (variable)	Check digit (optional)

Check digit verification: The check digit is made as the sum module 103 of all data digits.

Check digit transmission: By setting Enable, check digit will be transmitted.

Max. /Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Truncate leading zeros: Refer to Truncate leading zeros of Code 128.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 2501	Disable	00
	Enable	01*
Check digit verification 2502	Disable	00
	Enable	01*
Check digit transmission 2503	Disable	00*
	Reserved	01
Max. code length 2504	00-99	00-99
		00*
Min. code length 2505	00-99	00-99
		01*
Code ID setting 2506	00-FF_{16}	00-FF_{16}
	(ASCII)	<K>*
Insert group selection 2507	00-66	00-66
		00*
Truncate leading zeros 2508	Disable	00*
	All leading “0”s	01
	Only the first “0”	02

%%%END END

China Post

Read:

Format

11 Data digits

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00 01*
Reserved 		
Reserved 		
Reserved 		
Reserved 		
Code ID setting 	00-FF$_{16}$ (ASCII)	00-FF$_{16}$ <T>*
Insert group selection 	00-66	00-66 00*
Reserved 		

END

GS1 DataBar (GS1 DataBar Truncated)

GS1 DataBar Truncated is structured and encoded the same as the standard GS1 DataBar format, except its height is reduced to a 13 modules minimum; while GS1 DataBar should have a height greater than or equal to 33 modules.

Read:

Format

16 Data digits

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Conversion:

UCC/EAN 128- Refer to Code ID transmission of String transmission,]Cm will be identified as AIM ID.

UPC-A or EAN-13- Barcode beginning with a single zero as the first digit has the leading “010” stripped and the barcode reported as EAN-13. Barcode beginning with two or more zeros but not six zeros has the leading “0100” stripped and the barcode reported as UPC-A.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 2701	Disable Enable	00 01*
Code ID setting 2702	00-FF$_{16}$ (ASCII)	00-FF$_{16}$ <R >*
Insert group selection 2703	00-66	00-66 00*
Conversion 2704	None UCC/EAN 128 UPC-A or EAN-13	00* 01 02
Reserved 2705		

%%%END END

GS1 DataBar Limited

Read:

Format

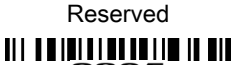
16 Data digits

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Conversion: Refer to Conversion of GS1 DataBar (GS1 DataBar Truncated).

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00 01*
Code ID setting 	00-FF$_{16}$ (ASCII)	00-FF$_{16}$ <R >*
Insert group selection 	00-66	00-66 00*
Conversion 	None UCC/EAN 128 UPC-A or EAN-13	00* 01 02
Reserved 		

END

GS1 DataBar Expanded

Read:

Format

Data characters (variable)

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

Conversion:

UCC/EAN 128- Refer to Code ID transmission of String transmission,]Cm will be identified as AIM ID.

SETUP

Option bar code	Option	Alpha. entry
Read 	Disable Enable	00 01*
Max. code length 	00-99	00-99 00*
Min. code length 	00-99	00-99 01*
Code ID setting 	00-FF_{16} (ASCII)	00-FF_{16} <R >*
Insert group selection 	00-66	00-66 00*
Conversion 	None UCC/EAN 128	00* 01
Reserved 		

END

PDF417

This decoder is only applied with a specified firmware.

The symbol size in the standard of PDF417 says, number of rows: 3 to 90, and number of columns: 1 to 30. This scanner can only decode PDF417 at rows from 3 to 40 and columns from 1 to 20.

The error correction level for a PDF417 symbol is from 0 to 8. This scanner can only support the levels from 0 to 6.

Read:

Format

Data characters (variable)

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 3001	Disable Enable	00* 01
Max. code length 3002	00-99	00-99 00*
Min. code length 3003	00-99	00-99 01*
Code ID setting 3004	00-FF_{16} (ASCII)	00-FF_{16} <P>*
Insert group selection 3005	00-66	00-66 00*
Reserved 3006		

%%%END END

MicroPDF417

This decoder is only applied with a specified firmware.

Read:

Format

Data characters (variable)

Max. /Min. code length: Refer to Max./Min. code length of Code 39.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 3101	Disable Enable	00* 01
Max. code length 3102	00-99	00-99 00*
Min. code length 3103	00-99	00-99 01*
Code ID setting 3104	00-FF_{16} (ASCII)	00-FF_{16} <P>*
Insert group selection 3105	00-66	00-66 00*
Reserved 3106		
Reserved 3107		

%%%END END

China Finance

Note: This type of barcode is not Omni-directionally decodable. The encodable character set includes numeric 0 to 9. Among the symbol of 0 to 9, 0 and 2, 4 and 9, 5 and 8, 6 and 7, have the symmetrical pattern; the pattern of 1 and 3 is symmetrical.

Read:

Format

10 Data digits

Max./Min. code length: Refer to Max./Min. code length of Code 39.

Check digit verification: The check digit is made as the sum module 10 of the numerical values of all data digits.

Leading character 5/6/7/8/9 converted to A/B/C/D/E: By setting, leading character 5/6/7/8/9 can be converted to A/B/C/D/E.

Leading character assignment: By setting, only the barcode with the assigned leading character can be output.

Code ID setting: Refer to Code ID setting of UPC-A.

Insertion group selection: Refer to Insertion group selection of UPC-A.

%SETUP SETUP

Option bar code	Option	Alpha. entry
Read 3201	Disable Enable	00 01*
Max. code length 3202	00-99	00-99 10*
Min. code length 3203	00-99	00-99 10*
Check digit verification 3204	Disable Reserved	00* 01
Leading character 5/6/7/8/9 converted to A/B/C/D/E 3205	Disable Enable Only 5 converted to A Only 6 converted to B Only 7 converted to C Only 8 converted to D Only 9 converted to E	00 01* 02 03 04 05 06
Leading character assignment 3206	Disable Assigned to 0 Assigned to 5(A) Assigned to 6(B) Assigned to 7(C) Assigned to 8(D) Assigned to 9(E) Assigned to 1 Assigned to 2 Assigned to 3 Assigned to 4	00 01* 02 03 04 05 06 07 08 09 10
Code ID setting 3207	00-FF_{16} (ASCII)	00-FF_{16} <Y>*
Insert group selection 3208	00-66	00-66 00*

%%%END END

%%LLDS

Laser Light Direction Setting: By scanning the barcode above, the decoding direction of the scanner's laser light is from left to right. By scanning the up-side-down barcode above, the decoding direction of the scanner's laser light is from right to left.

G1-G6 & FN1 substitution string setting

Format of barcode data transmission

Prefix	Code name	Preamble	Code ID	Code length	Code data	Code ID	Postamble	Suffix

Suffix string setting: The <enter > key is represented in different ASCII when it is applied by different OS. For a Windows/DOS OS, <enter> is represented as <CR><LF> (0x0D 0x0A); for an APPLE MAC OS, <enter> is represented as <CR> (0x0D); for a Linux/Unix OS, <enter> is represented as <LF> (0x0A).

Prefix/Suffix string setting: & **Preamble/Postamble string setting:**

They are appended to the data automatically when a barcode is decoded.

Example: Add a symbol of "$" as a prefix for all symbologies.

Steps:

1) Scan SETUP and Prefix string setting barcode.
2) Use the ASCII table to find the value of $→24.
3) Scan 2 and 4 from the barcode on the foldout back page.
4) Scan END barcode.

Scanning steps: Scan the following barcodes in order.

Insert G1/G2/G3/G4 string setting: The scanner offers 4 positions and 4 character strings to insert among the symbol.

Example: Set G1 string to be "AB".

Original code data	"1 2 3 4 5 6"
Output code data	"1 2 A B 3 4 5 6"

Steps:

1) Scan SETUP and Insert G1 string setting barcode.
2) Use the ASCII table to find the value of A→41, B→42.
3) Scan 4, 1 and 4, 2 from the barcode on the foldout back page.
4) Scan END barcode.
5) Refer to the chapter of G1-G4 string position & Code ID position.
6) Refer to the chapter of Hand-held scan & some global settings.

Testing barcode:

FN1 substitution string setting: The FN1 character (0x1D) in an UCC/EAN128 barcode, or a Code 128 barcode, or a GS1 DataBar barcode can be substituted with a defined string.

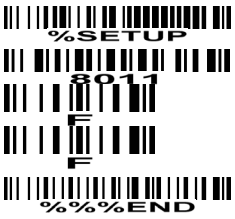
Truncate leading G5 string setting: By setting, a defined leading character or string can be truncated. Also a single character can be un-defined.

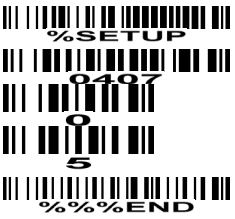
Repeat of a G5 character setting: While G5 is set as a single defined/un-defined character, G5 can also be set to be repeated. This setting is ignored when the truncate number is more than the barcode data characters. The option of "FF" for this setting is not active while the option of Truncate leading G5 string setting is "00".

Example: Truncate all leading zeros for all symbologies.

Original code data	"0001 2 3 4 5 6"
Output code data	"1 2 3 4 5 6"

Steps:



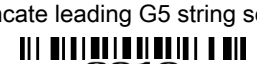
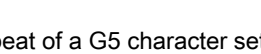


Testing barcode:

Truncate ending G6 string setting: By setting, a defined ending character or string can be truncated. Also a single character can be un-defined.

Repeat of a G6 character setting: While G5 is set as a single defined/un-defined character, G6 can also be set to be repeated. This setting is ignored when the truncate number is more than the barcode data characters. The option of "FF" for this setting is not active while the option of Truncate ending G6 string setting is "00".

%SETUP SETUP

Option bar code	Option	Alpha. entry
Prefix string setting 	0-22 characters None	00-FF$_{16}$ 00*
Suffix string setting 	0-22 characters <ENTER>	00-FF$_{16}$ 0A0D*
Preamble string setting 	0-22 characters None	00-FF$_{16}$ 00*
Postamble string setting 	0-22 characters None	00-FF$_{16}$ 00*
Insert G1 string setting 	0-22 characters None	00-FF$_{16}$ 00*
Insert G2 string setting 	0-22 characters None	00-FF$_{16}$ 00*
Insert G3 string setting 	0-22 characters None	00-FF$_{16}$ 00*
Insert G4 string setting 	0-22 characters None	00-FF$_{16}$ 00*
FN1 substitution string setting 	0-4 characters <SP>	00-FF$_{16}$ 20*
Truncate leading G5 string setting 	A un-defined character 1-22 defined characters <0>	00 01-7F$_{16}$ 30*
Repeat of a G5 character setting 	Once Defined times Un-defined times (All)	01* 01-22 FF
Truncate ending G6 string setting 	A un-defined character 1-22 defined characters <0>	00 01-7F$_{16}$ 30*
Repeat of a G6 character setting 	Once Defined times Un-defined times (All)	01* 01-22 FF

%%%END END

G1-G4 string position & Code ID position

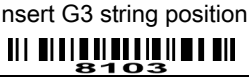
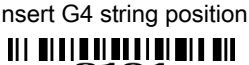
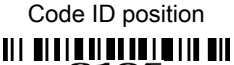
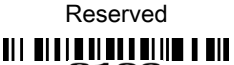
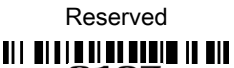
Format of barcode data transmission

Prefix	Code name	Preamble	Code ID	Code length	Code data	Code ID	Postamble	Suffix

Insert G1/G2/G3/G4 string position: The scanner offers 4 positions to insert strings among the symbol. In case of the insertion position is greater than the length of the symbol, the insertion of string is not effective.

Code ID position: It is allowed to select different positions of code ID placement.

SETUP

Option bar code	Option	Alpha. entry
Insert G1 string position 	00-99	00-99 00*
Insert G2 string position 	00-99	00-99 00*
Insert G3 string position 	00-99	00-99 00*
Insert G4 string position 	00-99	00-99 00*
Code ID position 	Before code data After code data	00* 01
Reserved 		
Reserved 		

END

String transmission

Note: The information in this chapter is closely related to the chapter of String setting.

Format of barcode data transmission

Prefix	Code name	Preamble	Code ID	Code length	Code data	Code ID	Postamble	Suffix

Preamble transmission: By setting Enable, preamble will be appended before the data transmitted.

Postamble transmission: By setting Enable, postamble will be appended after the data is transmitted.

Code ID transmission: Code ID can be transmitted in the format of either Proprietary ID or AIM ID. Refer to the chapter of Default setting for each barcode.

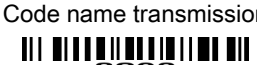
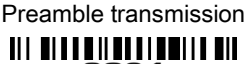
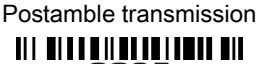
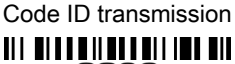
Code length transmission: The length of code data string can be transmitted before the code data when Enable is selected. The length is represented by a number with two digits.

Code name transmission: By setting Enable, code name will be transmitted before code data.

Case conversion: The characters within code data or the whole output string can be set in either upper case or lower case.

FN1 substitution transmission: The scanner supports a FN1 substitution feature for keyboard wedge, USB and RS-232 interface. The replacement string of FN1 can be chosen by user (see chapter of G1-G6 & FN1 substitution string setting).

%SETUP SETUP

Option bar code	Option	Alpha. entry
Prefix transmission  8201	Disable	00*
	Enable	01
Suffix transmission  8202	Disable	00
	Enable	01*
Code name transmission  8203	Disable	00*
	Enable	01
Preamble transmission  8204	Disable	00*
	Enable	01
Postamble transmission  8205	Disable	00*
	Enable	01
Code ID transmission  8206	Disable	00*
	Proprietary ID	01
	AIM ID	02
Code length transmission  8207	Disable	00*
	Enable	01
Case conversion  8208	Disable	00*
	Upper (data only)	01
	Lower (data only)	02
	Upper (whole string)	03
	Lower (whole string)	04
FN1 substitution transmission  8209	Disable	00*
	Keyboard wedge/USB	01
	RS-232	02
	Keyboard wedge/USB/RS-232	03
Reserved  8210		

%%%END END

Test Chart

UPC-A

UPC-E

EAN-8

EAN-13

Code 39

Code 32

Code 128

Interleaved 2 of 5

Industrial 2 of 5

Matrix 2 of 5

Code 93

UCC/EAN 128

Code 11

Test Chart (Continued)

MSI/Plessey

0123456789

UK/Plessey

01ABEF89

ISBN/ISSN

9 780194 315104

China Post

5478963214 5

GS1 DataBar (GS1 DataBar Truncated)

1234567890123

GS1 DataBar Limited

987654321012

GS1 DataBar Expanded

Ab_09+yZ

PDF417

01Az+-=

MicroPDF417

23+-mdo

Troubleshooting

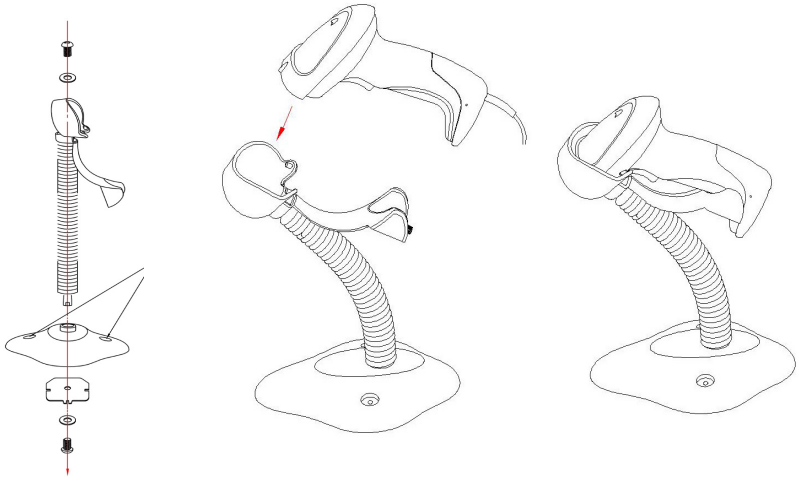
Problem	Possible causes	Possible solutions
Nothing happens when you follow the operating instructions, or the scanner displays erratic behavior.	No power to the scanner.	Check the system power. Ensure the power supply is connected.
	Incorrect cables.	Use the original cables.
	Connections are loose.	Check for loose cable connections.
Laser comes on, but the scanner does not decode.	Bar code symbol is unreadable.	Check the symbol to make sure it is not defaced. Try scanning test symbols of the same bar code type.
	Scanner is not programmed for the correct bar code type.	Be sure the scanner is programmed to read the type of bar code you are scanning.
	Distance between scanner and bar code is incorrect.	Move the scanner closer to or further from the bar code.
Scanned data is incorrectly displayed on the host.	Scanner is not programmed to work with the host. Check scanner host type parameters or editing options.	Be sure proper host is selected. For RS-232, ensure the scanner's communication parameters match the host's settings. For a USB-HID keyboard or a keyboard wedge configuration, ensure the system is programmed for the correct keyboard type and language, and the CAPS LOCK key is in the correct state.
Other circumstances.		Contact your distributor or the manufactory support centre.

Maintenance

Cleaning the exit window is the only maintenance required. A dirty window may affect scanning accuracy.

1. Do not allow any abrasive material to touch the window.
2. Remove any dirt particles with a damp cloth.
3. Wipe the window using a tissue moistened with water.
4. Do not spray water or other cleaning liquids directly into the window.
5. Use a soft, dry cloth when cleaning the scanner.

Assembling the stand



1. See the figure above, tighten the screws.
2. Bend the neck to the desired position for scanning.
3. Screw mounting: Screw one #10 wood screw into each screw-mount-hole until the base of the stand is secured.
4. Tape mounting: ①Peel the paper liner off one side of each piece of tape and place the sticky surface over each of the three rectangular tape holders. ②Peel the paper liner off the exposed sides of each piece of tape and press the stand on a flat surface until it is secure.

ASCII Table

	for keyboard wedge		for RS-232	
L / H	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	SUB
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

Notes: The 2nd and the 3rd columns above are used for keyboard wedge only.

L / H	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

Example: ASCII “A” = “41”.

Return default parameters & others

WARNING: Default value initialization

If you wish to return the scanner to all the factory default settings, scan the barcode above.

Firmware version list

If you wish to display the firmware version, scan the barcode above.

Configuration alphanumeric entry barcode