Introduction

Installation- Keyboard Wedge

1) First of all, you must switch off power for the terminal/computer.
2) Disconnect the keyboard cable from the back of the terminal/computer.
3) Connect the appropriate interface cable to the scanner and to the terminal/computer.
4) Turn the terminal/computer power on.

RS-232

1) Disconnect power to the terminal/computer.
2) Connect the appropriate interface cable and external power supply (DC adapter) to the scanner.
3) Plug the serial connector into the serial port on the back of your computer/terminal. Tighten the two screws to secure the connector to the port.
4) Plug the power pack into power source.
5) Once the scanner has been fully connected, turn the terminal/computer power back on.

USB (Simulate with keyboard wedge)

1) Connect the USB cable between scanner and PC.
2) Windows will automatically detect the USB device.

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

Default setting

For each barcode shown as below:

Code Type	Read Enable	Checksum Verification Enable	Checksum Transmission Enable	Code ID
	8110 / 8120			
UPC-A	V	V	V	A
UPC-E	V	V	V	E
EAN-13	V	V	V	F
EAN-8	V	V	V	FF
Code-39	V			*
Interleaved 2 of 5	V			i
Industrial 2 of 5		-	-	i
Matrix 2 of 5				B
Codabar	V (8110)			%
Code-128	V	V		#
Code-93		V two digits		&
Code-11		V One digit		O
MSI/Plessey		V		@
UK/Plessey		V		@
Telepen				S
Standard 2 of 5		-	-	i
RSS-14		-	-	R4
RSS-Limited		-	-	RL
RSS-Expanded		-	-	RX
China Post				t
Italian Pharmacode.				p

Code Type	Read Enable		Checksum Verification Enable	Checksum Transmission Enable	Code ID
	8150	8250 8310 8312			
UPC-A	V	V	V	V	A
UPC-E	V	V	V	V	E
EAN-13	V	V	V	V	F
EAN-8	V	V	V	V	FF
Code-39	V	V			*
Interleaved 2 of 5	V	V			i
Industrial 2 of 5			-	-	i
Matrix 2 of 5					B
Codabar					%
Code-128	V	V	V		#
Code-93			V two digits		&
Code-11			V One digit		O
MSI/Plessey			V		@
UK/Plessey			V		@
Telepen					S
Standard 2 of 5			V	V	i
China Post					t
Italian Pharmacode.					p
Code-16K	-		-	-	
PDF417	-	V	-	-	
EAN UCC Composite	-		-	-	RC
RSS-14	-				R4
RSS-Limited	-				RL
RSS-Expanded	-				RX
Micro-PDF	-	8312 only	-	-	U

ArgoScan 8110 / 8120		
Specification	Model 8110	Model 8120
Operational		
Light Source	660 nm Visible Red LED	
Optical System	2048 pixel CCD (Charge-coupled device)	
Depth of Scan Field	0-80 mm (CODE 39, PCS=90%, 20mils)	0-150 mm (code 39, PCS=90%, 20mils)
Scanning Width	80 mm at contact	75mm at contact
Scan Speed	50 scans/sec	100 scans/sec
Resolution	4mils, Code39, PCS=90%, on contact 5mils, Code39, PCS=45%, on contact	
Print Contrast	30% or more	
Scanning Angle	Pitch: 60° Skew: 75°	
Decode Capability	Auto-discriminates all standard barcodes; Other symbologies can be ordered optionally	
Beeper Operation	7 tones or no beep	
Indicator	Green led	Blue led
Mechanical		
Length	182 mm	
Width-handle	26 mm	
Width-head	90 mm	
Depth-handle	51 mm	49mm
Depth-head	35 mm	
Weight	155 g	120 g

Cable – K/B wedge	Straight 2.0 m	
Cable – universal type	Straight 2.3 m	
Connector type	RJ-45 phone jack connector	
Case material	ABS	
Cushion material	Rubber	
Electrical		
Input Voltage	5 VDC ± 0.25V	
Power - Operating	380 mW	850mW
Power - Standby	240 mW	250 mW
Current - Operating	76 mA @ 5 VDC	170 mA@5 VDC
Current - Standby	48 mA @ 5 VDC	50 mA@5 VDC
DC Transformers	Class 2; 5VDC @ 450 mA	
Agency listing	FCC Class A,CE, BSMI	
Environmental		
Operating Temperature	0℃ to 45℃ (32℉ to 113℉)	
Storage	-20℃ to 60℃ (-4℉ to 140℉)	
Humidity	5% to 90% relative humidity, non-condensing	
Light Level	Up to 15000 Lux.	Up to 20000 Lux.
Shock	1.0m	1.2m
Contaminants	Seals to resist airborne particulate contaminants	
Ventilation	None required	

Programming	
Programming method	Manual (Reading special barcode) DOS command through RS-232, Windows configuration program (8110)
Program upgrade	Enabled built-in flash memory (8110)
Programmable characteristics	Code type selection, check digit selection Decoding option Decoding option Transmitted character delay, Header selection, trailer selection, message suffix, good read beep tone and volume, scanner trigger selection Keyboard emulation type (intermessage delay, keyboard type and keyboard language) Serial interface type (ACK/NAK, Xon/Xoff, RTS/CTS, good read LED control, start/stop bits)

ArgoScan 8150 / 8250 / 8310 / 8312		
Specification	Model 8150/8250	Model 8310/8312
Operational		
Light Source	660 nm Visible Red LED	630 nm Visible Red LED
Optical System	2048 pixel CCD (Charge-coupled device)	
Depth of Scan Field	0-250 mm (CODE 39, PCS=90%, 20mils)	Up to 600mm (CODE 39, PSC=90%, 20mils)
Scanning Width	120 mm	160mm
Scan Speed	200 scans/sec	450 scans/sec
Resolution	0.1mm(4mils) Code39,PCS=90%	0.1mm(4mils) Code39,PCS=90%
Print Contrast	30% or more	25% or more
Scanning Angle	Front: 60° Rear: 60° Yaw: 75°	
Decode Capability	Auto-discriminates all standard barcodes; Other symbologies can be ordered optionally (2D symbologies for 8250 and 8312 only)	
Beeper Operation	7 tones or no beep	
Indicator	Green led	Green & Red led
Mechanical		
Length	182 mm	164 mm
Width-handle	26 mm	30 mm
Width-head	74 mm	78 mm
Depth-handle	51 mm	56 mm

Depth-head	35 mm	35 mm
Weight	160 g (cable not included)	176 g (cable not included)
Cable – K/B wedge	Straight 2.0 m	Coiled 2.5 m
Cable – universal type	Straight 2.3 m	Coiled 2.5 m
Cable- USB	Straight 2.0 m	Coiled 2.5 m
Connector type	RJ-45 phone jack connector	
Case material	PC	ABS (over molded at contact pointed)
Cushion material	Rubber	Double injection
Electrical		
Input Voltage	5 VDC ± 0.25V	
Power - Operating	1275 mW	800 mW
Power - Standby	600 mW	350 mW
Current - Operating	255 mA @ 5 VDC	160 mA @ 5 VDC
Current - Standby	120 mA @ 5 VDC	70 mA @ 5 VDC
DC Transformers	Class 2; 5VDC @ 450 mA	
Agency listing	UL, FCC Class A, CE	UL, FCC Class B, CE
Environmental		
Operating Temperature	0℃ to 45℃ (32℉ to 113℉)	0℃ to 50℃ (32℉ to 122℉)
Storage	-40℃ to 60℃ (-40℉ to 140℉)	-20℃ to 70℃ (-4℉ to 158℉)
Humidity	5% to 90% relative humidity, non-condensing	
Light Level	Up to 60000 Lux.	Up to 70000 Lux.
Shock	1.5m drop onto concrete	

Contaminants	Seals to resist airborne particulate contaminants
Ventilation	None required
Programming	
Programming method	Manual (Reading special barcode) DOS command through RS-232, Windows configuration program
Program upgrade	Enabled by built-in flash memory
Programmable characteristics	Code type selection, check digit selection Decoding option Decoding option Transmitted character delay, Header selection, trailer selection, message suffix, good read beep tone and volume, scanner trigger selection Keyboard emulation type (intermessage delay, keyboard type and keyboard language) Serial interface type (ACK/NAK, Xon/Xoff, RTS/CTS, good read LED control, start/stop bits)

Programming the ArgoScan 8110/8120/8150/8250/8310/8312

To program the 8110/8120/8150/8250/8310/8312, you must scan a series of programming barcode in the correct order. Fold out the back cover of this manual. You will see a table of alphanumeric barcodes, which are used to program the various options presented.

To program each option, you must:

1. Scan the **Program** barcode on the parameter setting part.
2. Enter the option mode by scanning the **Option Bar Code** (also on the Parameter setting part).
3. To the right of the option barcode, the necessary alphanumeric inputs are listed. Scan these alphanumeric entries from the **back fold out** page. To confirm above steps, you must scan the **Finish** barcode on the back fold out page.
4. Once you have finished programming. Scan the **Exit** barcode, listed on the lower right hand corner of each parameter setting part.

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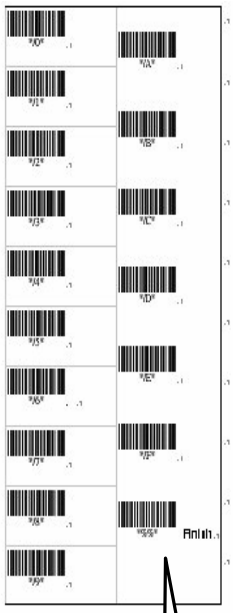
Program

Program Barcode

Option Bar Code	Option	Alphanumeric Entry
1AA	Keyboard Wedge	00*
Interface	RS-232	01
selection	Wand emulation	02
	USB	03
	Keyboard/RS-232	04
	Auto detection	
	Reserved	05



%$$

Exit

Option Barcode

Exit Barcode

Back Fold Out

Finish barcode

Interface Selection

This decoder built-in scanner comes in one model and supports interfaces such as keyboard wedge, RS232 serial wedge, wand emulation, and the latest USB interface. In most of the cases, simply selecting an appropriate cable with a device code will work for a specific interface.

Interface selection: You can change factory interface default for other type interface. By plugging different cables, setting right interface, then the scanner will be changed to another interface. However, you must make sure which cable you need.

Keyboard/RS232/UBS Auto detection: By setting this function, it will automatically select the Keyboard wedge or RS-232 or UBS interface for user.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Interface selection	Keyboard Wedge	00
	RS-232	01
	Wand emulation	02 (8110/8150/8250)
	USB Keyboard /RS232/USB Auto detection	03 04*
Note:* -Default		

Exit

Keyboard wedge

As a keyboard interface, the scanner supports most of the popular PCs and IBM terminals. The installation of the wedge is a fairly simple process without any changes of software or hardware.

Keyboard Type: Select keyboard type connector of your host computer. Scanner must be selected to the appropriate host interface cable converter.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
	IBM AT, PS/2	00*
	Reserved	01
Keyboard type	Reserved	02
	Reserved	03
	Reserved	04
	Reserved	05
	Reserved	06

Exit

Keyboard wedge

Keyboard Layout: The selecting of keyboard layout supports many country languages other than USA keyboard layout. First you need to confirm country language that you desire. In DOS, using command “keyb” to select the desirable keyboard layout or in WINDOWS entry “Control” then pops “Keyboard” to select country at “language” item. For details, please refer to your DOS or WINDOWS user’s manual.

Keyboard Speed: By selecting, you can change output speed of scanner to match with host computer. Generally, set 00 or 01 in working high speed. If some output characters of barcode have been lost, you may need to set 05 or 06 to match your host keyboard speed.

Function Key: Set Enable, scanner can output code as pressing function-key in your application program while the barcode datas contain ASCII value between 01_{16} to $1F_{16}$. Refer to ASCII table.

Numeric Key: The Keypad has to be selected if your application program is only keypad numeric code acceptable. So, scanner will output code as press numeric keypad when it read numeric digit. (The keypad is in the right side of keyboard, and Num Lock control key is also on.) If Alt+Keypad is selected, the data characters will be transmitted as “Alt” + numbers. For example, when sending character “A”, the actual sending will be “Alt”+65. It is also useful when using non-English OS and keyboard layout.

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Program

Option Bar Code	***Option***	***Alphanumeric Entry***

2AB Keyboard layout	USA Belgium Danish France Germany Italian Portuguese Spanish Swedish Switzerland UK Latin American Japanese	00* 01 02 03 04 05 06 07 08 09 10 11 12
2AC Keyboard speed	0-8 0 : high clock rate 8 : low clock rate	00-08 01 * (8150/8250) 03 *(83XX/8120)
2AD Function key	Disable Enable	00 01*
2AE Numeric key	Alphabetic key Numeric keypad (Num lock state only) Alt+Keypad	00* 01 02

%$$

Exit

Keyboard wedge

Caps Lock: By selecting Caps lock”ON” or Caps lock”OFF”, scanner can get Caps Lock status.

Power-on simulation: All of the PCs check the keyboard status during power-on selftest. It is recommended to Enable function if you are working without keyboard installation. It simulates keyboard timing and pass keyboard present status to the PC during power-on.

Inter-character delay: This delay is inserted after each data characters transmitted. If the transmission speed is too high, the system may not be able to receive all characters. Adjust it and try out suited delay to make system work properly.

Block transmission delay: It is a delay timer between barcode data output. The feature is used to transfer continually with shorter barcode data or multi-field scanning.

$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
2AF Caps lock	Caps lock"ON" Caps lock"OFF"	00 01*
2AG Power-on simulation	Disable Enable	00* 01
2AH Inter-character delay	00-99 msec	00-99 02*
2AI Block transmission delay	00-99 10 msec	00-99 10*

%$$

Exit

RS-232

CTS: Clear To Send (Hardware Signal)
RTS: Request To Send (Hardware Signal)
Xon: Transmit On (ASCII Code 11_{16})
Xoff: Transmit Off (ASCII Code13_{16})

Flow control:
None-The communication only uses TxD and RxD signals without regard for 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 (Response Delay) duration, the scanner will issue a 5 warning beeps.
Xon/Xoff- When the host computer is unable to accept data, it sends a Xoff code to inform the scanner to suspend data transmission, and Xon to continue.
ACK/NAK- When the ACK/NAK protocol is used, the scanner waits for an ACK (acknowledge) or (not acknowledge) from the host computer after data transmission, and will resend in response to a NAK.

Inter-character delay: It is delay time between data character's data output. It is also same as Inter-char. delay of keyboard wedge.

Block transmission delay: It is a delay time between barcode data output. It is also same as Block transmission delay of keyboard wedge.

Response delay: This delay is used for serial communication of the scanner to waiting for handshaking acknowledgment from the host computer.

$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
3AA Flow control	None RTS/CTS Xon/Xoff ACK/NAK	00* 01 02 03
3AB Inter-character delay	00-99 (msec)	00-99 00*
3AC Block transmission delay	00-99 (10 msec)	00-99 00*
3AD Response delay	00-99 (100 msec)	00-99 20*

%$$

Exit


$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 *3AE* Baud rate	300 BPS	00
	600 BPS	01
	1200 BPS	02
	2400 BPS	03
	4800 BPS	04
	9600 BPS	05*
	19200 BPS	06
	38400 BPS	07
 *3AF* Parity	None	00*
	Odd	01
	Even	02
 *3AG* Data bit	8 bits	00*
	7 bits	01
 *3AH* Stop bit	One bit	00*
	Two bits	01


%$$

Exit

Wand Emulation (for 8110/8150/8250)

Bar/space polarity:
High/low- Black will be transmitted as a high voltage level (+5) and space as low level (0V).
Low/high- Black will be transmitted as a low voltage level (0V) and space as high level (+5).

Initial polarity: You must make sure what is Initial polarity of your wand decode device in stand-by (idle). So, initial signal state as a High voltage level (+5) or Low voltage level (0V).

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Bar/space polarity	High/low Low/high	00* 01
 Initial polarity	Low High	00* 01

Exit

Wand Emulation (for 8110/8150/8250)

Output speed: This setting is same as serial transmission baud rate, and it must be approbated your wand decode resolution. The unit of speed is a width of minimum narrow bar.

Margin delay: It is a timer of zone like space zone of barcode label margin. The width of margin time will be added before and after in each barcode data automatically when it is transmitted.

Transmit delay: It is a delay time between barcode data output. It is the same as Block transmission delay of keyboard wedge.


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Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 *4AC* Output speed	620 pps 1250 pps 2500 pps 5000 pps 10000 pps 20000 pps *pps: pixel per second	00 01 02 03* 04 05
 *4AD* Reserved		00*
 *4AE* Reserved		00*
 *4AF* Margin delay	00-99 (10 pixel)	00-99 15*
 *4AG* Transmit delay	00-99 (10 msec)	00-99 30*

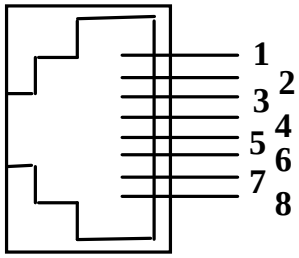

%$$

Exit

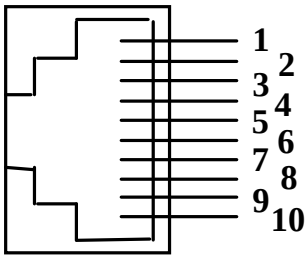
Pin Assignments

AS Series 8-pin RJ-45 Connector

Pin	RS-232	Keyboard
1	VCC (+5V)	VCC (+5V)
2	TXD	NC
3	NC	CLK / PC
4	NA	DATA / PC
5	CTS	DATA / KB
6	RXD	NC
7	RTS	CLK / KB
8	GND	GND



8-pin



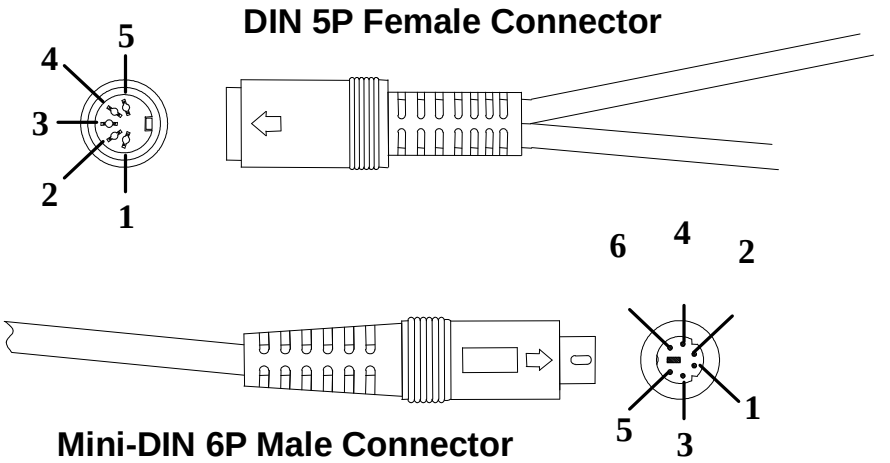
10-pin

AS Series 10-pin RJ-45 Connector

Pin	RS-232	Keyboard
1	I/F	I/F
2	VCC (+5V)	VCC (+5V)
3	TXD	NC
4	NC	CLK / PC
5	GND	DATA / PC
6	CTS	DATA / KB
7	RXD	NC
8	RTS	CLK / KB
9	GND	GND
10	NC	GND

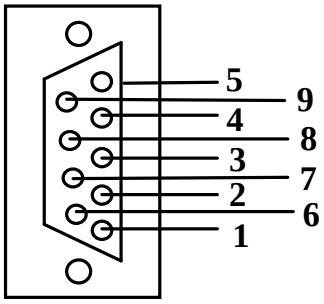
Keyboard Wedge Combo Connector (To Host Side):

Pin	Mini-DIN 6P Male	DIN 5P Female
1	DATA / PC	DATA / KB
2	NC	NC
3	GND	GND
4	VCC (+5V)	VCC (+5V)
5	CLK / PC	CLK / KB
6	NC	NC



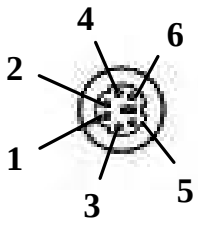
RS-232 DB-9F Connector (To Host Side):

Pin	Definition
1	NC
2	TXD
3	RXD
4	NC
5	GND
6	NC
7	CTS
8	RTS
9	VCC (+5V)

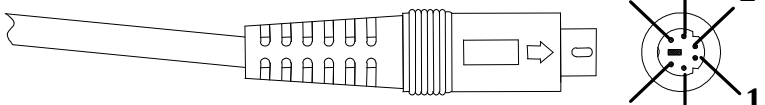


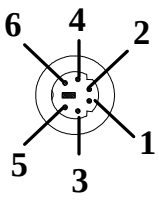
Keyboard Wedge PS/2 Connector (To Host Side):

Pin	Mini-DIN 6P Male	Mini-DIN 6P Female
1	DATA / PC	DATA / KB
2	NC	NC
3	GND	GND
4	VCC (+5V)	VCC (+5V)
5	CLK / PC	CLK / KB
6	NC	NC



Mini-DIN 6P Female Connector





Mini-DIN 6P Male Connector

Scan

Scanning mode:
Good-read off-The trigger button must be pressed 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.
Alternate-The trigger button acts as a toggle switch. Press button to activate or stop scanning.
Timeout off-The trigger button must be pressed to activate scanning, and scanner stops scanning when no code is decoded after the Stand-by duration elapsed.
Continue-Scanner always keeps reading, and it does not matter when trigger button is pressed or duration is elapsed.
Test only-For test of scan performance only. It is improper to be utilized to check the accuracy of transmitted data.

Double read timeout: The scanner will require a several times successful decoding to confirm the data when enabled. The more confirming times required, the more inhibitive miss-reading code will be shown. The Multi field scan Enable function won't be able to work if set Double confirm.

Double confirm: If the barcode has been scanned twice, then only the first barcode will be accepted.

Supplement Check Counter: It will be more reliable to read the barcode with extension (supplement) like UPCE/A or EAN-8/13, but slow down the decoding speed when this counter is set more.

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Program

Option Bar Code	***Option***	***Alphanumeric Entry***
7AA Scanning mode	Good-read off Momentary Alternate Timeout off Continue Test only	00 01* 02 03 04 05
7AB Stand-by duration	01-99 (second)	00-99 06*
7AC Double read timeout	01-99 (10 msec)	01-99 50*
7AD Double confirm	00-99 (00: no double confirm)	00-09 00*

%$$

Exit

Scan

Global min./max. code length: These are to define the min/ max readable code length of all symbologies. Code length less than min. code length or more than max. code length will not be read. In popular, you can set the same value for both min. and max. reading length to force the fixed length barcode decoded. The values of setting have no effect on certain symbologies with fixed length. You can specify the settings for individual barcode by the min/max code length setting of each barcode.

Notes 1): Please set the min/max length if you have special demand for individual barcode.

2): Include the Check sum digits if you want to set Global min/max code length.

Inverted image scan: Set Enabled the scanner will scan both black/white barcode with white/black background.

CTS trigger: This operation enabled an external device to control scanning. The CTS trigger is controlled by apply an external trigger signal to the CTS input. When active, this signal causes scanning to begin as the scanner's trigger was depressed.

Power saving mode: When it is enabled, scanner will enter idle status if not used. The illumination of the red beam will be reduced to optimize power consumption but will recover when scan required. Normally, the power saving mode is activated with continuous mode.

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Program

Option Bar Code	***Option***	***Alphanumeric Entry***
7AF Global min. code length	00-64	00-64 04*
7AG Global max. code length	00-64	04-64 63*
7AH Inverted image scan	Disable Enable	00* 01
7AI CTS trigger	Disable Enable	00* 01
7AJ Power saving mode (For 8310/8312)	Disable Enable	00* 01

%$$

Exit

Scan

Position indication (8110 excluded): If the function is enabled, scan beam will flash as a pointer to help you aim at the bar code prior to scanning. The code will not be scanned until you press the trigger.

Stand mode selection: Normally activated with continuous mode. If it is set as LED “off”, the scanner red beam will turn off automatically in case not used, but will turn on again immediately when scanning bar codes. This is only available for AS-8310/8312/8120

PCS Enhancement: The reading performance under low PCS value will be improved when this function is enabled. It is recommended to set “Double confirm” (7AD) other than “00”.

$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
7AK Position indication	Disable 30 second 60 second 90 second 120 second 150 second 180 second Continue	00* 01 02 03 04 05 06 07
7AL Stand mode selection (For 8310/8312/8120)	LED ‘’on” LED ‘’off”	00* 01
7AM PCS Enhancement (For 8120)	Disable Enable	00* 01

%$$

Exit

Indication

Power on alert: After power-on the scanner it 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 buzzer to indicate a good barcode reading, and its Beep loudness, Beep tone freq. and Beep tone duration are adjustable.

Beep loudness/Beep tone freq./Beep tone duration: You can adjust Beep Loudness, Beep tone and Beep duration for a good reading upon favorite usage.

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Program

Option Bar Code	***Option***	***Alphanumeric Entry***
5AA Power on alert	Disable Enable	00 01*
5AB LED indication	Disable Enable	00 01*
5AC Beeper indication	Disable Enable	00 01*
5AD Beep loudness	00-07	00-07 07*
5AE Beep tone freq.	00-99 (100Hz)	00-99 26*
5AF Beep tone duration	00-99 (10 msec)	00-99 10*

%$$

Exit

UPCA

Format

Leading Zero	Data Digits (11 Digits)	Check Digit

Read: Enable or disable the read function.

Check-sum transmission: By setting Enable, checks sum will be transmitted.

Truncate leading/ending: The leading or ending digits of barcode data characters can be truncated when these values are set to non-zero. It will beep instead of reading anything when the truncate value is more than the barcode data digits or the value of Truncate Leading is overlapped with that of the Ending. The maximum value of truncate digits is 15.

Code ID setting: Code ID setting is a character used to represent the symbol upon a succeeding reading. A Code ID setting is prefixed to the data begin or end transmitted if the feature is selected. If you want application to transmit Code ID, you must set Code ID transmission to Enable first. Refer to Code ID transmission.

$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
NAA Read	Disable Enable	00 01*
NAC Check-sum transmission	Disable Enable	00 01*
NAF Truncate leading	0-15	00-15 00*
NAG Truncate ending	0-15	00-15 00*
NAH Code ID setting	00-ffH ASCII code	00-ffH < A >*

%$$

Exit

UPCA

Insertion group number selection: The scanner offers max. two insertion groups for one symbology. By setting one or two digits to indicate which insertion group you want to insert. You may refer to Character insertion. The function is to insert specific characters as a group into transmitted data of selected symbologies. Enable the group insertion by selecting the group number.

Example: Group 2 → set 02 or 20.

Group 1 and 4 → set 14 or 41.

Notes 1): Group number set to “0” means that no group insertion required.

2): Details about the Insert Group settings please refer to page 98~101, and page 107 ASCII code table.

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

Format

Leading Zero	Data Digits (11 Digits)	Check Digit	Supplement Digits 2 or 5 or UCC / EAN 128

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Insert group number selection	00-44	00-44 00*
 Supplement digits (For 8110/8150/8250)	None 2 digits 5 digits UCC/EAN 128 Auto detection	00* 01 02 03 04
 Supplement digits (For 8120/8310/8312)	None 2 digits 5 digits 2,5 digits UCC/EAN 128 2, UCC/EAN 128 5, UCC/EAN 128 All	00* 01 02 03 04 05 06 07

Exit

UPCA

Truncation / Expansion: The leading “0” digits of UPCA data characters can be truncated when the function is enabled.

$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
NAK Truncation/ Expansion (For 8110)	Disable Enable	00 01*
NAK Truncation/ Expansion (For 8120/8150/8250/ 8310/8312)	None Truncate leading zero Expand to EAN13	00 01* 02

%$$

Exit

UPCE

Read: Format

Leading Zero	Data Digits (6 Digits)	Check Digits

Check-sum transmission: By setting Enable, checks sum will be transmitted.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Read	Disable Enable	00 01*
 Check-sum transmission	Disable Enable	00 01*
 Truncate leading	0-15	00-15 00*

OAG Truncate ending	0-15	00-15 00*
OAH Code ID setting	00-ffH ASCII code	00-ffH < E >*

%$$

Exit

UPCE

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Supplement digits:

Format

Leading Zero	Data Digits (6 Digits)	Check Digit	Supplement Digits 2 or 5 or UCC/EAN 128

Expansion: The expansion function is used only for UPCE and EAN-8 code reading. It extends to 13-digits with “0” digits when the feature is enabled.

Example: Barcode “0123654”

Output: “0012360000057”

UPCE-1: Enable scanner to read UPCE with leading digit 1.

$%+PRO **Program**

Option Bar Code	***Option***	***Alphanumeric Entry***
OAI Insert group number selection	00-44	00-44 00*
OAJ Supplement digits (For 8110/8150/8250)	None 2 digits 5 digits UCC/EAN 128 Auto detection	00* 01 02 03 04

OAJ Supplement digits (For 8120/8310/8312)	None 2 digits 5 digits 2,5 digits UCC/EAN 128 2, UCC/EAN 128 5, UCC/EAN 128 All	00* 01 02 03 04 05 06 07
OAK Truncation/Expansion (For 8110)	Disable Enable	00* 01
OAK Truncation/Expansion (For 8120/8150/8250/ 8310/8312)	None Truncate leading zero Expand to EAN13 Expand to UPCA	00* 01 02 03
OAL Expansion	Disable Enable	00* 01
OAM UPCE-1	Disable Enable	00* 01

%$$

Exit

EAN-13

Read: Format

Data Digits (12 Digits)	Check Digits

Check-sum transmission: By setting Enable, checks sum will be transmitted.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Truncate leading zero: Refer to Truncation / Expansion of UPCA.

$%+PRO **Program**

Option Bar Code	***Option***	***Alphanumeric Entry***
GAA Read	Disable Enable	00 01*
GAC Check-sum transmission	Disable Enable	00 01*
GAF Truncate leading	0-15	00-15 00*

GAG Truncate ending	0-15	00-15 00*
NAK Truncation leading zero	Disable Enable	00 01*

%$$

Exit

EAN-13

Code ID setting: Refer to page 36 Insertion group number selection of UPCA.

Insertion group number selection: Refer to Insertion group selection of UPCA.

Supplement digits:

Format

Data Digits (12 Digits)	Check Digits	Supplement Digits 2 or 5 or UCC / EAN 128

ISBN/ISSN: The ISBN (International Standard Book Number) and ISSN (International Standard Serial Number) are two kinds of barcode for book 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 “9789572222720” - Output: “9572222724”

Example: Barcode “9771019248004” - Output: “10192484”

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 *GAH* Code ID setting	00-ffH ASCII code	00-ffH < F >*
 *GAI* Insert group number selection	00-44	00-44 00*

GAJ Supplement digits (For 8110/8150/8250)	None 2 digits 5 digits UCC/EAN 128 Auto detection	00* 01 02 03 04
GAJ Supplement digits (For 8120/8310/8312)	None 2 digits 5 digits 2,5 digits UCC/EAN 128 2, UCC/EAN 128 5, UCC/EAN 128 All	00* 01 02 03 04 05 06 07
GAL ISBN/ISSN conversion	Disable Enable	00* 01

%$$

Exit

EAN-8

Read: Format

Data Digits (7 Digits)	Check Digits

Check-sum transmission: By setting Enable, checks sum will be transmitted.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code ID setting: Refer to Code ID setting of UPCA.
Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Read	Disable Enable	00 01*
 Check-sum transmission	Disable Enable	00 01*
 Truncate leading	0-15	00-15 00*

FAG Truncate ending	0-15	00-15 00*
FAH Code ID setting	Two characters 00-ffH ASCII code	00-ffH, 00-ffH < FF >*
FAI Insert group number selection	00-44	00-44 00*

%$$

Exit

EAN-8

Supplement digits: Format

Data Digits (7 Digits)	Check Digits	Supplement Digits 2 or 5 or UCC/EAN 128

Truncation / Expansion: Refer to Truncate Leading zero of UPCE.

Expansion: Refer to Expansion of UPCE.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Supplement digits (For 8110/8150/8250)	None	00*
	2 digits	01
	5 digits	02
	UCC/EAN 128	03
	Auto detection	04
 Supplement digits (For 8120/8310/8312)	None	00*
	2 digits	01
	5 digits	02
	2,5 digits	03
	UCC/EAN 128	04
	2, UCC/EAN 128	05
	5, UCC/EAN 128	06
	All	07

FAK Truncation / Expansion (For 8110)	Disable Enable	00* 01
FAK Truncation / Expansion (For 8120/8150/8250 /8310/8312)	None Truncate leading zero Expand to EAN13	00* 01 02
FAL Expansion	Disable Enable	00* 01

%$$

Exit

Code 39

Read: Format

Start “★”	Data Digits (Variable)	Checksum (Optional)	End “★”

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

Check-sum transmission: By setting Enable, checksum will be transmitted.

Max./Min. code length: Each symbology has own Max./Min. Code Length. They can be set to qualify data entry. If their Max./Min. Code Length is zero, the Global Min./Max. Code Length is in effect. 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.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Read	Disable Enable	00 01*

BAB Check-sum verification	Disable Enable	00* 01
BAC Check-sum transmission	Disable Enable	00* 01
BAD Max. code length	00-64	00-64 00*
BAE Min. code length	00-64	00-64 00*
BAF Truncate leading	0-20	00-20 00*
BAG Truncate ending	0-15	00-15 00*
BAH Code ID setting	00-ffH ASCII code	00-ffH <* >

Exit

Code 39

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Format: The Full ASCII Code-39 is an enhanced set of Code-39 that is the data with total of 128 characters to represent Full ASCII code. It is combined one of the digits +, %, $ and/ with one of the alpha digits (A to Z).

Append: This function allows several symbols to be concatenates and be treat as one single data entry. The scanner will not transmit the embedded appending code (space for Code-39). If Enable and other symbols were read again with the appended code, then codes will be transmitted without Code ID, Preamble and Prefix. When a symbol was decoded without the appended code, the data will be transmitted without Code ID and Prefix, but the Postamble Suffix codes are appended. This function is used when the first number of code 39 is a space. Example: □123456.

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

$%+PRO **Program**

Option Bar Code	***Option***	***Alphanumeric Entry***
BAI Insert group number selection	00-44	00-44 00*

BAJ Format	Standard Full ASCII	00* 01
BAK Append	Disable Enable	00* 01
BAM Start/end transmission	Disable Enable	00* 01

%$$

Exit

Interleaved 2 of 5

Read: Format

Data Digits (Variable)	Checksum (Optional)

Check-sum verification: The checksum is made as the sum module 10 of the numerical values of all data digits.
Check-sum transmission: By setting Enable, checksum will be transmitted.
Max./Min. code length: Refer to Max./Min. code length of Code-39.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code ID setting: Refer to Code ID setting of UPCA.
Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Read	Disable Enable	00 01*
 Check-sum verification	Disable Enable	00* 01

IAC Check-sum transmission	Disable Enable	00* 01
IAD Max. code leading	00-64	00-64 00*
IAE Min. code leading	00-64	00-64 00*
IAF Truncate leading	0-15	00-15 00*
IAG Truncate ending	0-15	00-15 00*
IAH Code ID setting	00-ffH ASCII code	00-ffH < i >*
IAI Insert group number selection	00-44	00-44 00*

%$$

Exit

Industrial 2 of 5

Read: Format

Data Digits (Variable)	Checksum (Optional)

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

$%+PRO **Program**

Option Bar Code	***Option***	***Alphanumeric Entry***
HAA Read	Disable Enable	00* 01
HAD Max. code length	00-64	00-64 00*
HAE Min. code length	00-64	00-64 00*

 *HAF* Truncate leading	0-15	00-15 00*
 *HAG* Truncate ending	0-15	00-15 00*
 *HAH* Code ID setting	00-ffH ASCII code	00-ffH < i >*
 *HAI* Insert group number selection	00-44	00-44 00*


%$$

Exit

Matrix 2 of 5 Eur

Read: Format

Data Digits (Variable)	Checksum (Optional)

Checksum Verification: The checksum is made as the sum module 10 of the numerical values of all data digits.
Checksum Transmission: By setting Enable, checksum will be transmitted.
Max./Min. code length: Refer to Max./Min. code length of Code-39.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code ID setting: Refer to Code ID setting of UPCA.
Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00* 01
 Checksum Verification	Disable Enable	00* 01

PAC Checksum Transmission	Disable Enable	00* 01
PAD Max. code length	00-64	00-64 00*
PAE Min. code length	00-64	00-64 00*
PAF Truncate leading	0-15	00-15 00*
PAG Truncate ending	0-15	00-15 00*
PAH Code ID setting	00-ffH ASCII code	00-ffH < B >*
PAI Insert group number selection	00-44	00- 44 00*

%$$

Exit

Codabar

Read: Format

Start	Data Digits (Variable)	Checksum (Optional)	End

Checksum Verification: The checksum is made as the sum module 16 of the numerical values of all data digits.

Checksum Transmission: By setting Enable, checksum will be transmitted.

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
EAA Read	Disable	00* (8120/8150/8250 /8310/8312)
	Enable	01* (8110)
EAB Checksum Verification	Disable	00*
	Enable	01

EAC Checksum Transmission	Disable Enable	00* 01
EAD Max. code length	00-64	00-64 00*
EAE Min. code length	00-64	00-64 00*
EAF Truncate leading	0-15	00-15 00*
EAG Truncate ending	0-15	00-15 00*
EAH Code ID setting	00-ffH ASCII code	00-ffH < % >*

%$$

Exit

Codabar

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.
Start/End type: The 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.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
EAI Insert group number selection	00-44	00-44 00*
EAJ Start/End type	ABCD/ABCD abcd/abcd ABCD/TN*E Abcd/tn*e	00* 01 02 03
EAK Start/End transmission	Disable Enable	00* 01

%$$ **Exit**

Code-128

Read: Format

Data Digits (Variable)	Checksum (Optional)

Checksum Verification: The checksum is made as the sum module 103 of all data digits.

Checksum Transmission: By setting Enable, checksum will be transmitted.

Program

Option Bar Code	Option	Alphanumeric Entry
 *DAA* Read	Disable Enable	00 01*
 *DAB* Checksum Verification	Disable Enable	00 01*
 *DAC* Checksum Transmission	Disable Enable	00* 01

Exit

Code-128

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Format: The Code-128 can be translated to UCC/EAN-128 format if it starts with FNC1 character. The first FNC1 will be translated to “]C1”,and next to be a field separator code as <GS>($1D_{16}$).

]C1	Data	<GS>	Data	Checksum

Program

Option Bar Code	Option	Alphanumeric Entry
 Max. code length	00-64	00-64 00*
 Min. code length	00-64	00-64 00*

DAF Truncate leading	0-15	00-15 00*
DAG Truncate ending	0-15	00-15 00*
DAH Code ID setting	00-ffH ASCII code	00-ffH < # >*
DAI Insert group number selection	00-44	00-44 00*
DAJ Format	Standard UCC/EAN-128	00* 01

%$$

Exit

Code-128

Append: When the function is enabled, it won't show the data immediately if scanner read the barcode includes FNC2 code. It will show all data until it read the barcode, which doesn't have FNC2 code.

UCC/ EAN 128 ID setting: To setting the code ID for UCC/EAN-128 output format.

Field separator code: This feature is only used for UCC/EAN-128 format. This Field separator code means you can reassign second or after a FNC1 for your usage. The default of ASCII code is <GS>($1D_{16}$).

$%+PRO

Program

Option Bar Code	Option	Alphanumeric Entry
DAK Append	Disable Enable	00* 01
DAL UCC/EAN-128 ID setting	00-ffH ASCII code	00-ffH < # >*
DAM Field separator code	00-ffH ASCII code	00-ffH 1DH*

%$$

Exit

Code-93

Read: Format

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

Checksum Verification: The checksum is made as the sum module 47 of the numerical values of all data digits.
Checksum Transmission: By setting Enable, checksum will be transmitted.

Program

Option Bar Code	Option	Alphanumeric Entry
 *CAA* Read	Disable Enable	00* 01
 *CAB* Checksum Verification	Disable Enable (two digits)	00 01*
 *CAC* Checksum Transmission	Disable Enable	00* 01

Exit

Code-93

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.


$%+PRO

Program

Option Bar Code	Option	Alphanumeric Entry
 *CAD* Max. code length	00-64	00-64 00*
 *CAE* Min. code length	00-64	00-64 00*
 *CAF* Truncate leading	0-15	00-15 00*
 *CAG* Truncate ending	0-15	00-15 00*

CAH Code ID setting	00-ffH ASCII code	00-ffH < & >*
CAI Insert group number selection	00-44	00-44 00*

%$$

Exit

Code-11

Read: Format

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

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

Checksum Transmission: By setting Enable, checksum1 and checksum2 will be transmitted upon your selected checksum verification method.

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00* 01
 Checksum Verification	Disable One digit Two digits	00 01* 02

AAC Checksum Transmission	Disable Enable	00* 01
AAD Max. code length	00-64	00-64 00*
AAE Min. code length	00-64	00-64 00*
AAF Truncate leading	0-15	00-15 00*
AAG Truncate ending	0-15	00-15 00*
AAH Code ID setting	00-ffH ASCII code	00-ffH < O >*
AAI Insert group number selection	00-44	00-44 00*

%$$

Exit

MSI/plessey

Read: Format

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

Checksum Verification: The MSI/Plessey has one or two optional checksum digits. The checksum is presented 3 kinds of method Mod10, Mod10/10 and Mod 11/10. The checksum1 and checksum2 will be calculated as the sum module 10 or 11 of the data digits.

Checksum Transmission: By setting Enable, checksum1 and checksum2 will be transmitted upon your selected checksum verification method.

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00* 01
 Checksum Verification	Disable Mod 10 Mod 10/10	00* (8110) 01* (8120/8150/8250 /8310/8312) 02

	Mod 11/10	03
KAC Checksum Transmission	Disable Enable	00* 01
KAD Max. code length	00-64	00-64 00*
KAE Min. code length	00-64	00-64 00*
KAF Truncate leading	0-15	00-15 00*
KAG Truncate ending	0-15	00-15 00*
KAH Code ID setting	00-ffH ASCII code	00-ffH < @ >*
KAI Insert group number selection	00-44	00-44 00*

%$$

Exit

UK/plessey

Read: Format

Data Digits (Variable)	Checksum1+2 (Optional)

Checksum Verification: The UK/Plessey has one or two optional checksum digits. The checksum1 and checksum2 will be calculated as the sum module 10 or 11 of the data digits.

Checksum Transmission: By setting Enable, checksum will be transmitted.

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
LAA Read	Disable Enable	00* 01
LAB Checksum Verification	Disable Enable	00 01*

LAC Checksum Transmission	Disable Enable	00* 01
LAD Max. code length	00-64	00-64 00*
LAE Min. code length	00-64	00-64 00*
LAF Truncate leading	0-15	00-15 00*
LAG Truncate ending	0-15	00-15 00*
LAH Code ID setting	00-ffH ASCII code	00-ffH < @ >*
LAI Insert group number selection	00-44	00-44 00*

%$$

Exit

Telepen

Read: IATA (International Air Transport Association).
Checksum Verification: The checksum is presented as the sum module 10 or 11 of the data digits.
Checksum Transmission: By setting Enable, checksum will be transmitted.
Max./Min. code length: Refer to Max./Min. code length of Code-39.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code ID setting: Refer to Code ID setting of UPCA.
Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00* 01
 Checksum Verification	Disable Enable	00* 01
 Checksum Transmission	Disable Enable	00* 01

MAD Max. code length	00-64	00-64 00*
MAE Min. code length	00-64	00-64 00*
MAF Truncate leading	0-15	00-15 00*
MAG Truncate ending	0-15	00-15 00*
MAH Code ID setting	00-ffH ASCII code	00-ffH < S >*
MAI Insert group number selection	00-44	00-44 00*
MAJ Format	Numeric only Full ASCII only	00* 01

%$$

Exit

Standard 2 of 5

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

Check-sum verification: The checksum is made as the sum module 10 of the numerical values of all data digits.
Check-sum transmission: By setting Enable, checksum will be transmitted.
Max./Min. code length: Refer to Max./Min. code length of Code-39.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code ID setting: Refer to Code ID setting of UPCA.
Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 *JAA* Read	Disable Enable	00* 01
 *JAB* Check-sum verification	Disable Enable	00* 01

JAC Check-sum transmission	Disable Enable	00* 01
JAD Max. code length	00-64	00-64 00*
JAE Min. code length	00-64	00-64 00*
JAF Truncate leading	0-15	00-15 00*
JAG Truncate ending	0-15	00-15 00*
JAH Code ID setting	00-ffH ASCII code	00-ffH < i >*
JAI Insert group number selection	00-44	00-44 00*

%$$

Exit

China Post

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
SAA Read	Disable Enable	00* 01
SAD Max. code length	00-64	00-64 11*
SAE Min. code length	00-64	00-64 11*

 *SAF* Truncate leading	0-15	00-15 00*
 *SAG* Truncate ending	0-15	00-15 00*
 *SAH* Code ID setting	00-ffH ASCII code	00-ffH < t >*
 *SAI* Insert group number selection	00-44	00-44 00*


%$$

Exit

Italian Pharmacode (Code 32)

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Leading "A": If this function is enabled, each prefix of data shall be A.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00* 01
 Max. code length	00-64	00-64 12*

WAE Min. code length	00-64	00-64 09*
WAF Truncate leading	0-15	00-15 00*
WAG Truncate ending	0-15	00-15 00*
WAH Code ID setting	00-ffH ASCII code	01-ffH < p >*
WAI Insert group number selection	00-44	00-44 00*
WAJ Leading “A”	Disable Enable	00* 01

%$$

Exit

Code-16K (for 8250/8312)

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00* 01
 Truncate leading	0-15	00-15 00*
 Truncate ending	0-15	00-15 00*
 Code ID setting	00-ffH ASCII code	00-ffH < >*

RAI Insert group number selection	00-44	00-44 00*

%$$ **Exit**

PDF-417 (for 8250/8312)

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

$%+PRO

Program

Option Bar Code	Option	Alphanumeric Entry
QAA Read	Disable Enable	00 01*
QAF Truncate leading	0-15	00-15 00*
QAG Truncate ending	0-15	00-15 00*
QAH Code ID setting	00-ffH ASCII code	00-ffH < >*
QAI Insert group number selection	00-44	00-44 00*
QAJ Escape sequence transmit	Disable Enable	00* 01

%$$

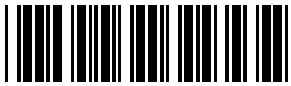
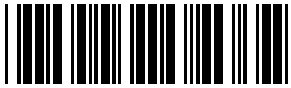
Exit

EAN UCC Composite (for 8312)

For the coupon extended code application. Coupon extended code is a supplementary barcode that is printed to the right of the UPC/EAN in UCC/EAN-128 symbology.


$%+PRO

Program

Option Bar Code	Option	Alphanumeric Entry
 *YAA* Read	Disable Enable	00* 01
 *YAD* Max. code length	00-64	00-64 64*
 *YAE* Min. code length	00-64	00-64 01*
 *YAF* Truncate leading	0-15	00-15 00*
 *YAG* Truncate ending	0-15	00-15 00*

YAH Code ID setting	00-ffH ASCII code	00-ffH < RC >*
YAI Insert group number selection	00-44	00-44 00*
YAK UCC / EAN128 emulation	Disable Enable	00 01*

%$$ **Exit**

RSS-14

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

UCC/EAN 128 emulation: Refer to Transmission, Code ID transmission must be set as AIM ID enable. Then]C1 will be identified as prefix of barcode data transmission.

Program

Option Bar Code	Option	Alphanumeric Entry
 *TAA* Read	Disable Enable	00* 01

 *TAF* Truncate leading	0-15	00-15 00*
 *TAG* Truncate ending	0-15	00-15 00*
 *TAH* Code ID setting	00-ffH ASCII code	00-ffH < R4 >*
 *TAI* Insert group number selection	00-44	00-44 00*
 *TAK* UCC/EAN128 emulation	Disable Enable	00* 01


%$$

Exit

RSS-Limited

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

UCC/EAN 128 emulation: Refer to UCC/EAN 128 emulation of RSS-14.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
UAA Read	Disable Enable	00* 01
UAF Truncate leading	0-15	00-15 00*
UAG Truncate ending	0-15	00-15 00*

UAH Code ID setting	00-ffH ASCII code	00-ffH < RL >*
UAI Insert group number selection	00-44	00-44 00*
UAK UCC/EAN128 emulation	Disable Enable	00* 01

%$$

Exit

RSS-Expanded

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

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

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

UCC/EAN 128 emulation: Refer to UCC/EAN 128 emulation of RSS-14.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
VAA Read	Disable Enable	00* 01
VAD Max. code length	00-99	00-99 99*

VAE Min. code length	00-99	00-99 01*
VAF Truncate leading	0-15	00-15 00*
VAG Truncate ending	0-15	00-15 00*
VAH Code ID setting	00-ffH ASCII code	00-ffH < RX >*
VAI Insert group number selection	00-44	00-44 00*
VAK UCC/EAN128 emulation	Disable Enable	00* 01

%$$

Exit

Micro-PDF (for 8312)

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code ID setting: Refer to Code ID setting of UPCA.

Insertion group number selection: Refer to page 36 Insertion group number selection of UPCA.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
XAA Read	Disable Enable	00* 01
XAF Truncate leading	0-15	00-15 00*
XAG Truncate ending	0-15	00-15 00*
XAH Code ID setting	00-ffH ASCII code	00-ffH < >*

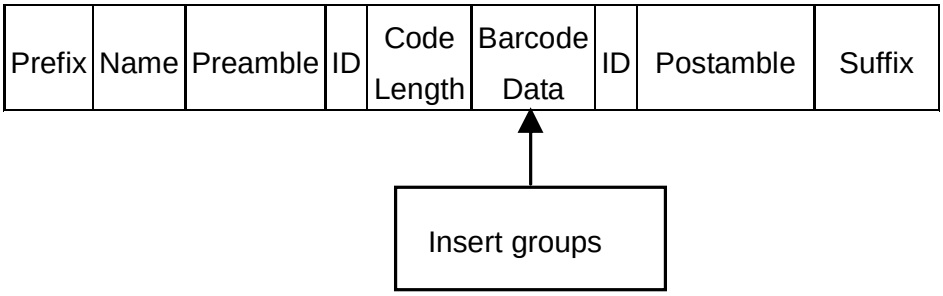
XAI Insert group number selection	00-44	00-44 00*
XAJ Escape sequence transmit	None GLI protocol ECI protocol	00 01 02*

%$$ **Exit**

String setting / Transmission (Prefix / Suffix)

Prefix / Suffix characters setting: Characters defined as prefix or suffix characters will be transmitted immediately with the scanned data for all symbologies. Up to 22 ASCII characters can be defined as Prefix or Suffix.

Format of barcode data transmission:



.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
8AA Prefix characters setting	None 1-22 characters	00* 00-ffH ASCII code
8AB Suffix characters setting	None 1-22 characters	0D* 00-ffH ASCII code

%$$ **Exit**

String setting / Transmission (Preamble/Postamble)

Preamble/ Postamble characters: Preamble or Postamble characters will be appended to the data automatically for all symbologies. However, the transmission will not activate unless **Preamble / Postamble transmission** is enabled.

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.

Example:
Add a prefix/suffix or preamble/postamble for all symbologies. In this example, you are sending a $ symbol as a prefix for all symbologies.
Steps:
1) Scan Programming and Prefix characters setting barcode.
2) Use the ASCII code table to find the value of $→24.
3) Scan 2 and 4 from the barcode on the fold out back page.
4) Scan Finish from the barcode on the fold out page.
5) Scan Exit barcode.

$%+PRO

Program

Option Bar Code	Option	Alphanumeric Entry
8AC Preamble characters setting	None 1-22 characters	00* 00-ffH ASCII code
6AA Preamble transmission	Disable Enable	00* 01
8AD Postamble characters setting	None 1-22 characters	00* 00-ffH ASCII code
6AB Postamble transmission	Disable Enable	00* 01

%$$

Exit

String setting / Transmission (Insert Group Characters)

Insert G1/G2/G3/G4 character setting: The scanner supports inserting two groups with each group 22 characters into transmitted data of selected symbologies. The two groups can be inserted into scanned data of the selected symbologies or positioned at leading / ending of data. There are total four groups for utilization.

Insert data group position: To define the position of a group to insert into bar code data. Please notice that the inserting position of a group must not exceed the code length; or the insertion will be positioned at the ending of data.
Notice: Default value “00” indicates the group to be positioned at the leading of data. “64” represents for positioning the group at the ending of data.

Insert data group setting procedure:

i. **Define the characters of groups for insertion.**
ii. **Setup the inserting position of each group in scanned data.**
iii. **Select one or two groups to insert into specific bar codes. Please refer to the setting pages of each bar code.**

Example: Barcode “1 2 3 4 5 6”.
Output- Barcode “1 2 A B 3 4 C D 5 6”.
Steps:
1) Scan Programming and Insert G1 characters setting barcode.
2) Use the ASCII code table to find the value of A→41,B→42.
3) Scan 4, 1 and 4, 2 from the barcode on the fold out back page.
4) Scan Finish from the barcode on the fold out page.

5) Repeat the same procedure in Insert G2 characters setting.

6) Scan Exit barcode.

6) Insert data group 1-4 position. Please refer to Chapter-Transmission, page 65 and in specific barcode that you want to use.

7) **Insert data group 1-4 position:** The scanner offers 4 positions to insert among the symbol. The position default value is “00” to indicate no character insertion. Beside, make sure insertion positions are not greater than the symbols; otherwise the insertion data is not effective.

Program

Option Bar Code	Option	Alphanumeric Entry
 *8AE* Insert G1 characters setting	None 1-22 characters	00* 00-ffH ASCII code
 *8AF* Insert G2 characters setting	None 1-22 characters	00* 00-ffH ASCII code

Exit

String setting / Transmission (Insert Group Characters)

Program

 Insert G3 characters setting	None 1-22 characters	00* 00-ffH ASCII code
 Insert G4 characters setting	None 1-22 characters	00* 00-ffH ASCII code
 Insert data group 1 position	00-63 (00: no insertion)	00-63 00*
 Insert data group 2 position	00-63 (00: no insertion)	00-63 00*
 Insert data group 3 position	00-63 (00: no insertion)	00-63 00*

6AF Insert data group 4 position	00-63 (00: no insertion)	00-63 00*

%$$

Exit

String setting / Transmission (Others)

Code ID position: Upon your usage, the transmitting position of Code ID can be selected to place Before Code Data or After Code Data when it is transmitted.

Code ID transmission: If your application is needed to transmit Code ID, you must set this to Proprietary ID or AIM ID.

Code length transmission: A number of data digits can be transmitted before the code data when Enable is selected. The total length of the barcode is the number of barcode data except Truncate Leading/Ending Digits. And the length is a number with two digits.

Code name transmission: This function is to show unknown barcode symbologies that include all readable symbologies of the scanner. When Enable is selected, Code Name will be transmitted before code data, you will know what kind of barcode symbology is.

Case conversion: Setup the scanned data characters to be transmitted all in upper case or lower case. For example: If upper case is selected, “12aBcDeF” will be converted and transmitted to host as “12ABCDEF”.

Program

Option Bar Code	Option	Alphanumeric Entry

6AG Code ID position	Before code data After code data	00* 01
6AH Code ID transmission	Disable Proprietary ID AIM ID	00* 01 02
6AI Code length transmission	Disable Enable	00* 01
6AJ Code name transmission	Disable Enable	00* 01
6AK Case conversion	Disable Upper case Lower case *For barcode data only	00* 01 02

%$$

Exit

Test Chart (Bar code samples marked with symbol “*” are enabled initially.)

CODABAR-PARA (8110 *)

CODE-11 PARA

**CODE-128 PARA *

**CODE-39 PARA *

CODE-93 PARA

**EAN-13 PARA *

PDF-417 (8250/8312 *)

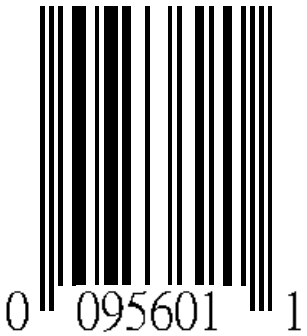
STANDRAD-25 PARA

CODE-16K

**EAN-8 PARA *

INDUSTRIAL-25 PARA

**UPCE PARA *



**INTERLEAVED-25 PARA *

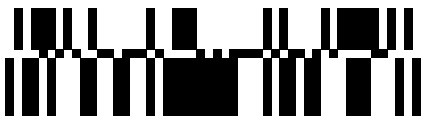
MATRIX 25 PARA

MSI/PLESSEY PARA

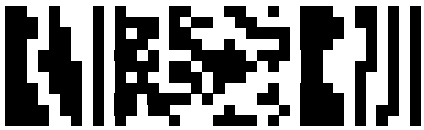
**UPCA PARA *

UK/PLESSEY PARA

RSS



Micro-PDF (8312 *)



ASCII Code Table *Note:* *For keyboard wedge only.*

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

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

Parameter Setting List

$%+PRO

Program

!BS

Barcode standard parameter setting list

If you wish to display the current configuration of your AS-8110/8120/8150/8250/8310/8312, scanner over the host terminal/computer, scan the Barcode standard parameter setting list bar code.

!BU

Unique parameter list

If you wish to display the unique parameter setting list, scan the unique parameter list bar code

!SY

System parameter setting list

If you wish to display the product information and revision number for your AS-8110/8120/8150/8250/8310/8312 scanner over the host terminal/computer, scan the System parameter setting list bar code.

!ST

String setting list

If you wish to display the string format list, scan the String setting list bar code.

%$$

Exit

Query present scanner firmware version

Program

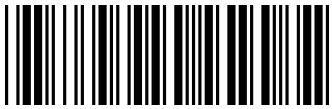
Firmware version list

If you wish to display the firmware version, scan the “Firmware version list” barcode.

Exit

Reset scanner to factory default settings

Program



<u>WARNING</u>: Default value initialization

If you wish to return the AS-8110/8120/8150/8250/8310 to all the factory default settings, scan the Default value initialization bar code.


/0 **0**


/1 **1**


/2 **2**


/3 **3**


/4 **4**


/5 **5**


/6 **6**


/7 **7**


/8 **8**


/9 **9**


/A **A**


/B **B**


/C **C**


/D **D**


/E **E**


/F **F**


%% **Finish**