

FUZZYSCAN BARCODE IMAGER

Programming Manual

International Edition, Rev. B7



cino

Revision History

Rev. No.	Released Date	Description
Rev.B Beta	Apr. 16, 2009	First Release
Rev.B	May 05, 2009	<ul style="list-style-type: none"> ❖ Page 22 Code 128/EAN-128 Setting – Modify ISBT Concatenation Off option code to “4” and ISBT Concatenation On option code to “5”. ❖ Page 25 GS1 Databar Setting – All GS1 databar default values are changed to Enable. ❖ Page 46 Add “Symbology ID Table”.
Rev.B1	June 22, 2009	<ul style="list-style-type: none"> ❖ Page 34 Add “Presentation Scanning Mode”. ❖ Page 37 Add “Time Delay to Low Power Mode”.
Rev.B2	Aug. 21, 2009	<ul style="list-style-type: none"> ❖ Page 9, 11 Add “PDF417/Micro PDF417”, “Codablock F”, “Korea Post Code”. ❖ Page 26 Add “Composite Code Setting”, “PDF/MicroPDF417 Setting”, “Codablock F Setting”, Korea Post Code Setting”. ❖ Page 39 Add “SmartStand Power Off Timeout”. ❖ Page 46 Add “PDF417/Micro PDF417”, “Codablock F”, “Korea Post Code” into Condensed DataWizard Table. ❖ Page 48 Add “PDF417/Micro PDF417”, “Codablock F”, “Composite Code”, “Korea Post Code” IDs into Symbology ID Table.
Rev.B3	Oct. 16, 2009	<ul style="list-style-type: none"> ❖ Page 8 Add “IBM PS/2, 25-30 series keyboard wedge interface”. ❖ Page 39 Add “Presentation Scanning Auto-sense”. ❖ Page 48 Add “Code 128” ID into Symbology ID Table.
Rev.B4	Mar. 05, 2010	<ul style="list-style-type: none"> ❖ Page 15 Modify UPC-E/EAN-8 expansion and UPC-A standardization ❖ Page 33 Rename “Time Out Control” to “Serial Response Time-out”. ❖ Page 35 Rename “Presentation Scanning Mode” to “Presentation Control”. ❖ Page 38 Rename “Auto Power Off Duration” to “Light Source On Time”. Add “Extremely short” option to Good Read Duration. ❖ Page 39 Rename “Presentation Scanning Auto-sense” to “Presentation Auto-sense”. Add “Presentation Sensitivity” ❖ Page 54 System Commands – Add “Maser Default” quick set command.
Rev. B5	Apr.12, 2010	<ul style="list-style-type: none"> ❖ Page 38 Hands Free Time out – Add “Disable”. ❖ Page 39 Add “Trigger Control” (only available for FuzzyScan F460/F468).

Revision History

Rev. No.	Released Date	Description
Rev. B6	May 27, 2010	❖ Page 33 Baud Rate – Add 57.6K BPS and 115.2K BPS.
Rev. B7	Jun 25 , 2010	❖ Page 17 Add “UPC/EAN Security Level”. ❖ Page 38 Add “Immediate” parameter (option 5) for "Time Delay to Low Power Mode" and change the default value from 5 seconds to immediate.

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Regulatory





	FCC part 15B
	EN55022, EN55024, EN61000-3-2, EN61000-3-3
	CNS13438
	Industry Canada ICES-003
LED Eye Safety	IEC60825-1, EN60825-1

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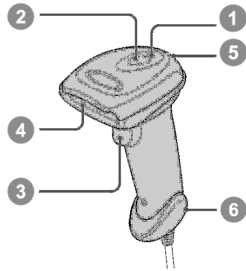
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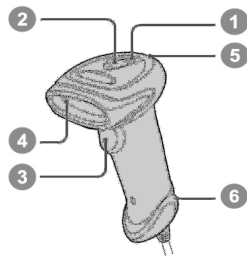
Getting Familiar with Your FuzzyScan

Thank you for choosing Cino FuzzyScan Imager. All FuzzyScan imagers deliver world-class performance for a broad range of applications to unleash your productivity. This document provides an easy reference for installation and operation purposes. A complete documentation is provided by the FuzzyScan Programming Manual available at www.cino.com.tw.

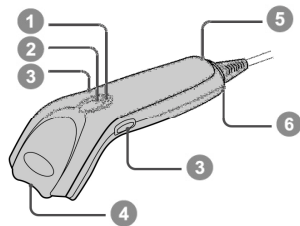
F700 Series



F600 Series



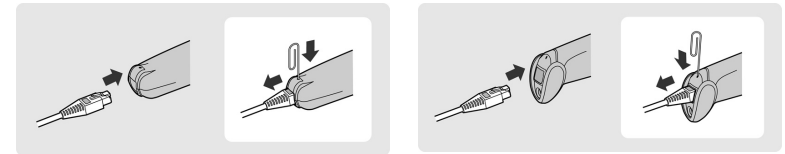
F400 Series



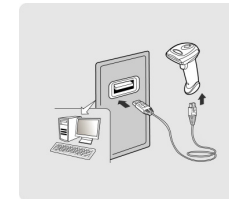
- 1 Power Indicator
- 2 Status Indicator
- 3 Trigger
- 4 Scan Window
- 5 Beeper
- 6 Cable Release Hole

Connecting to Your Host

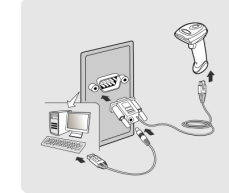
FuzzyScan imagers support PS/2(DOS/V) Keyboard Wedge, RS-232 Serial, and USB interfaces. Please choose your desired interface cable, then plug it into the cable interface port of the imager and connect it to the host. If you would like to remove the cable, please straighten one end of a paper clip, then insert it into the cable release hole to pull out the cable.



USB



RS232 Serial



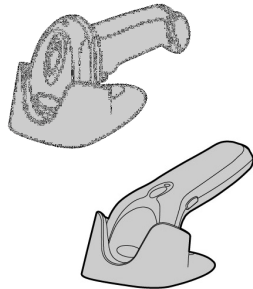
PS/2(DOS/V) Keyboard Wedge



Using Accessories

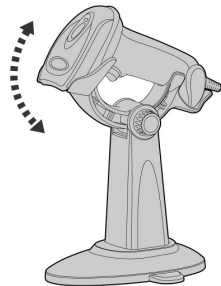
You can enhance productivity of your workforce by using various accessories to fulfill a wide variety of application demand.

Universal Holder




A stylish Universal Holder is designed for storing your imager when not in use. It serves to protect the imager from lens-scratched or falling. Moreover, its artistic-design enhances the entire value of the imager.

Hand-free SmartStand



A SmartStand is specifically designed for hand-free applications to maximize user's comfort and productivity. You can adjust the scanner holder to desired position for optimized scanning.

Thanks to the auto-sense design, the imager is capable of switching between presentation scanning and hand-held scanning automatically while working with SmartStand.

 Please note that the SmartStand is not applicable for F400 Series imager.

Bar Code Programming Menu

The FuzzyScan bar code commands are specially designed **Proprietary** bar code labels which allow you to set the FuzzyScan internal programming parameters. There are **System Command**, **Family Code** and **Option Code** for programming purpose.

Each programmable family and bar code command label is listed on the same page with major system commands. The detailed explanations and special programming flowchart are printed on facing or following pages. You can read the explanation and set the FuzzyScan concurrently.

A supplemental bar code command menu incorporates the bar code command labels of System Command and Option Code. As you set the FuzzyScan, open the bar code command menu to find the option code page. You may scan the desired family code and option code to set FuzzyScan. If you want to change the programming family for multiple settings, you need only turn over the programming page to find next desired programming family.

System Command

The System Command is the highest level bar code command which directs FuzzyScan to perform immediate operations, such as entering programming mode (**PROGRAM**), exiting programming mode (**EXIT**), listing system information (**SYSLIST**), recovering to factory preset configurations (**M_DEFAULT**), and so on. Please note that all system commands will take a few seconds to complete the operations. User must wait for the completion beeps before scanning another bar code.

Family Code

The Family Code is scanned to select the user desired programming family. FuzzyScan has already provided more than one hundred programming families to meet any specific requirements.

Option Code

The Option Codes is a set of bar code commands represented by “**0–9**”, “**A–F**” and finishing selection (**FIN**). For most setting, you must select at least one option code following the family code selection to set the desired parameter for the selected programming family.

Programming Procedures

As you scan the bar code command to select the desired parameters, information about the final selected parameters represented by the bar code commands are stored in the FuzzyScan's internal Flash Memory ASIC or non-volatile memory. If you turn off the unit, the Flash Memory ASIC or non-volatile memory retains all programming options. You need not re-program the FuzzyScan if you want to keep the existing configurations in the next power on.

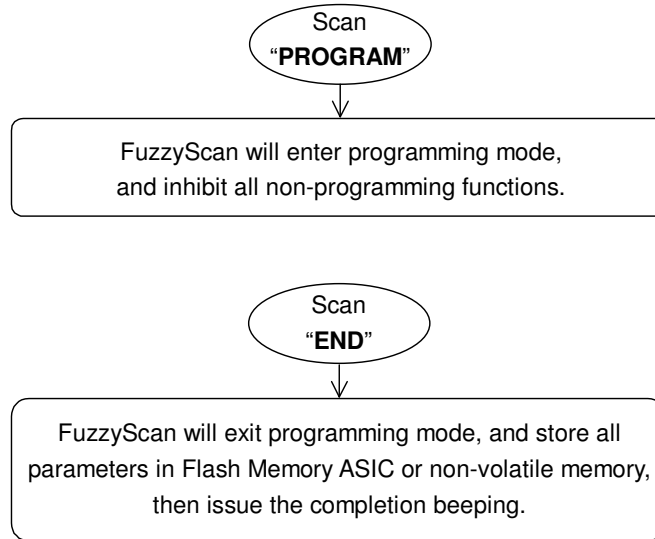
The programming procedures of FuzzyScan are designed as simple as possible for ease of setting. Most programming families take the **Single Scan Selection** programming procedure. But several programming families have more complex and flexible programmable options, and you must take **Multiple Scans Selection, Cycling Scan Selection or Dual Level Selection** to complete their programming procedures. Each kind of programming procedure is listed in the following pages for your reference. Please give careful attention to become familiar with each programming procedure.

If the programming family must take multiple scans selection, cycling scan selection, or dual level selection procedures, the family of the programming menu will be marked with the matched representing symbol of **Programming Category** (P.C.) in bold font listed in the following table. You can easily find the bold mark in the programming menu, and refer to their flowcharts for details. Before setting the FuzzyScan, please also refer to the "Beeping Indications" listed in Appendix to understand the details of programming beeping indications. It will be very helpful for you to know the existing status while you are programming the FuzzyScan.

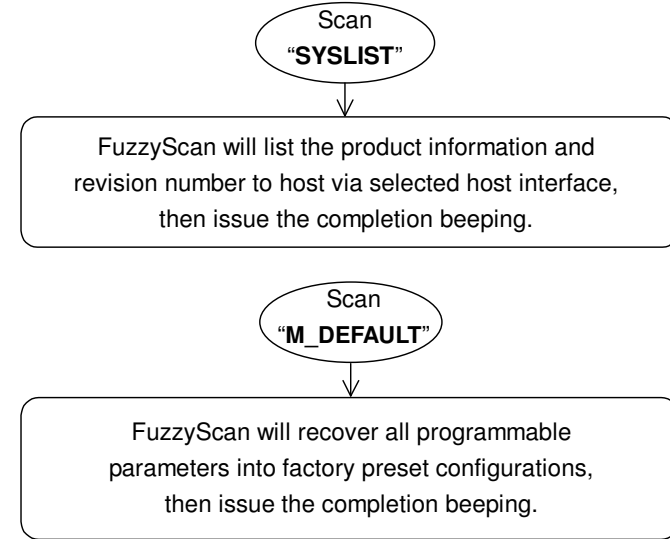
Conventions of Programming Menu

Conventions	Descriptions
◆	Factory Default Value
P.C.	Programming Category SS : Single scan selection MS : Multiple scans selection CS : Cycling scan selection DS : Dual level scan selection
()	Necessary Option Code
[]	Selectable Option Code

Program & End

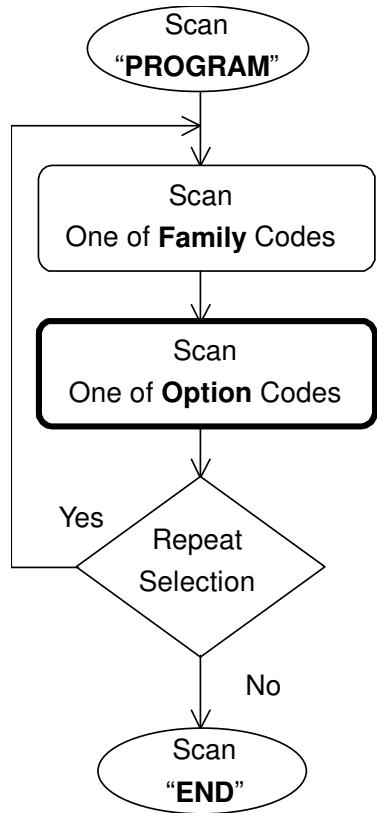


System List, Group & Master Default



Please note that the FuzzyScan will take 3-4 seconds to store parameters in internal Flash Memory ASIC or non-volatile memory after you scan the **"END"**. Please **don't** turn off the power before the completion beeping. It may destroy all configured parameters.

Single scan selection



Enter programming mode.

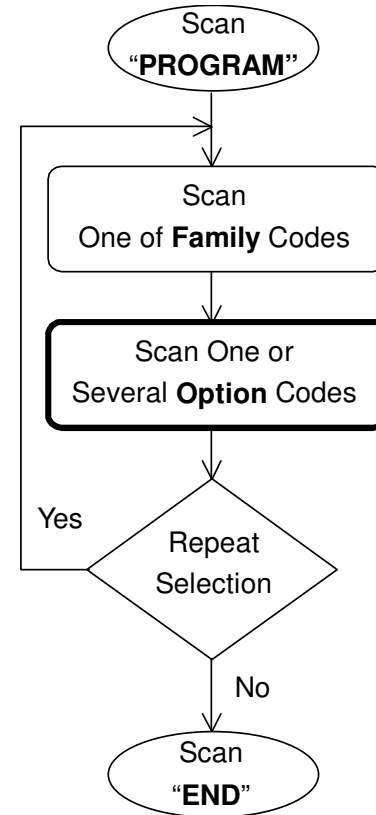
Select one of desired programming families.

Select one option code of desired parameter.

Want to select another programming family?

Exit programming mode.

Multiple scans selection



Enter programming mode.

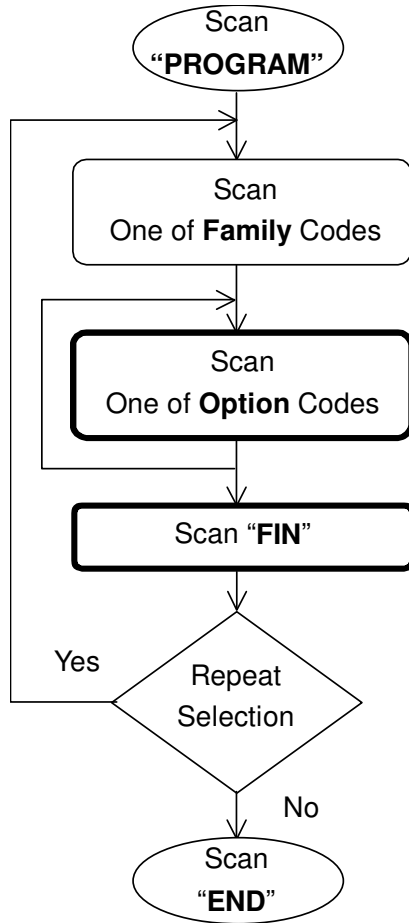
Select one of desired programming families.

1. Select one or several option codes to select desired parameters.
2. If it's necessary, scan "FIN" to terminate option code selection.

Want to select another programming family?

Exit programming mode.

Cycling scan selection



Enter programming mode.

Select one of desired programming families.

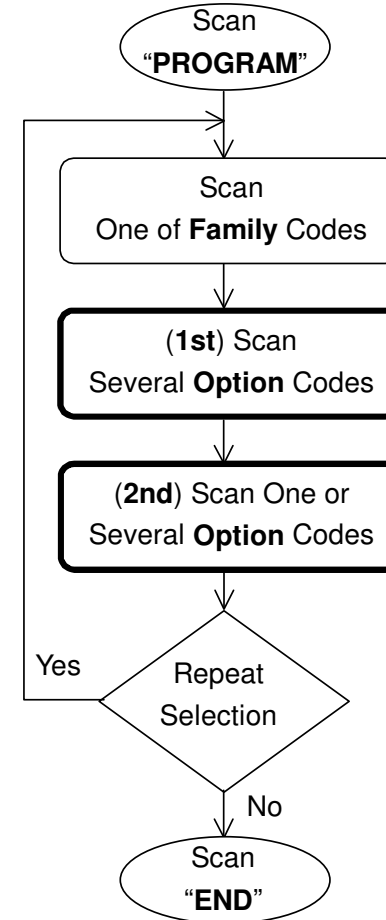
Cycling select one or several option codes of desired parameters as "Single" or "Multiple" scans selection.

Finish cycling selection.
(If necessary)

Want to select another programming family?

Exit programming mode.

Dual level selection



Enter programming mode.

Select one of desired programming families.

Select several option codes of desired parameters.

1. Select one or several option codes of desired parameters.
2. If it's necessary, scan "FIN" to terminate option code selection.

Want to select another programming family?

Exit programming mode.




PROGRAM

Host Interface Selection



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Host Interface Selection 	MS	IBM PS/2, 25-30 series keyboard wedge interface	02
	MS	Standard/TTL RS-232 peer-to-peer serial	06
	MS	Wand emulation	08
	MS	USB Com Port Emulation	09
	MS	PS/2 (DOS/V) direct link (keyboard replacement)	10
	MS	PS/2 (DOS/V) keyboard wedge turbo mode	13
	MS	PS/2 (DOS/V) keyboard wedge standard mode	14
	MS	Laser emulation	17
	MS	USB HID standard mode ◆	18
	MS	USB HID turbo mode	19



PROGRAM

Symbology Reading Control

◆ User Defined Symbol ID ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Symbol ID : 1 character 	DS	Code 128 (default=B)	00	(1 character)
		UCC/EAN-128 (default=C)	01	(1 character)
		UPC-A (default=A)	02	(1 character)
		EAN-13 (default=F)	03	(1 character)
		Codabar/NW-7 (default=D)	04	(1 character)
		Code 39/Code 32 (default=G)	05	(1 character)
		Code 93 (default=H)	06	(1 character)
		Standard/Industrial 2 of 5 (default=I)	07	(1 character)
		Interleaved 2 of 5 (default=J)	08	(1 character)
		Matrix 2 of 5 (default=K)	09	(1 character)
		China Postal Code (default=L)	10	(1 character)
		German Postal Code (default=M)	11	(1 character)
		IATA (default=O)	12	(1 character)
		Code 11 (default=P)	13	(1 character)
		MSI/Plessey (default=R)	14	(1 character)
		UK/Plessey (default=S)	15	(1 character)
		Telepen (default=T)	16	(1 character)
		GS1 DataBar (default=X)	17	(1 character)
		UPC-E (default=E)	18	(1 character)
		EAN-8 (default=N)	19	(1 character)
Trioptic Code 39 (Default=W)	20	(1 character)		
UCC Coupon Extended Code (Default=Z)	21	(1 character)		
PDF417/Micro PDF417 (default=V)	22	(1 character)		
Codablock F (default=Y)	23	(1 character)		
Korea Post Code (default =a)	26	(1 character)		




PROGRAM

Symbology Reading Control

◆ Symbology ID Transmission ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Symbology ID Transmission 	SS	Disable symbology ID transmission ◆	0
	SS	Enable prefix CINO symbology ID transmission	1
	SS	Enable suffix CINO symbology ID transmission	2
	SS	Enable both prefix and suffix CINO symbology ID transmission	3
	SS	Enable prefix AIM symbology ID transmission	4
	SS	Enable suffix AIM symbology ID transmission	5
	SS	Enable both prefix and suffix AIM symbology ID transmission	6




PROGRAM

Symbology Reading Control

◆ Readable Bar Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Readable Symbology Setting  <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Remember to scan “FIN” to terminate this selection. But if you select the “Auto”, FuzzyScan will terminate this selection automatically. </div>	SS	Auto ◆	00
	CS	Code 128 *	01
	CS	UPC-A *	02
	CS	UPC-E *	03
	CS	EAN-13 *	04
	CS	EAN-8 *	05
	CS	Codabar/NW-7 *	06
	CS	Code 39 *	07
	CS	Trioptic Code 39	47
	CS	Standard/Industrial 2 of 5	08
	CS	Matrix 2 of 5	38
	CS	Interleaved 2 of 5 *	48
	CS	China Postal Code	58
	CS	German Postal Code	68
	CS	Code 93 *	09
	CS	Code 11	10
	CS	MSI/Plessey	11
	CS	UK/Plessey	12
	CS	Telepen	13
	CS	GS1 DataBar (RSS-14) *	14
	CS	IATA	15
CS	PDF417/Micro PDF417	17	
CS	Codablock F	18	
CS	Korea Post Code	21	

- If your application is known, you may select those known symbologies only to increase the reading speed and decrease the possibility of reading error. Furthermore, to add the “**Symbology ID**” into the transmitted data is also helpful to identify the specific symbology.
- Above symbologies marketed with * are enable as default. When you select “Auto”, the imager only read those symbologies marked with *.
- When you set the minimum and maximum length of each symbology, please note the data length of scanned bar code doesn't include star/stop characters.



PROGRAM

Symbology Reading Control

◆ Code 39/Code 32 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 39 Family Setting 	SS	Disable Code 39	0
	SS	Enable Code 39 ◆	1
	SS	Select Standard Code 39 as primary format ◆	2
	SS	Select Full ASCII Code 39 as primary format	3
	SS	Select Code 32 (PARAF, Italian Pharmaceutical) as primary format	4
	SS	Disable start/stop symbol transmission ◆	5
	SS	Enable start/stop symbol transmission	6
	SS	Disable Code 32 leading A transmission ◆	7
	SS	Enable Code 32 leading A transmission	8
	SS	Disable MOD 43 check digit verification ◆	9
	SS	Enable MOD 43 check digit verification	A
	SS	Disable check digit transmission ◆	B
	SS	Enable check digit transmission	C
	SS	Disable Code 39 buffering ◆	D
SS	Enable Code 39 buffering	E	
Trioptic Code 39 Setting 	SS	Disable Trioptic Code 39 ◆	0
	SS	Enable Trioptic Code 39	1
Code 39 Min. Length 	SS	Default (01) ◆	FIN (2 digits)
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
Code 39 Max. Length 	SS	Default (98) ◆	FIN (2 digits)
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	

▪ Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously.



PROGRAM

Symbology Reading Control

◆ Codabar/NW-7 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Codabar Setting 	SS	Disable Codabar	0
	SS	Enable Codabar ◆	1
	SS	Select Codabar standard format ◆	2
	SS	Select Codabar ABC format	3
	SS	Select Codabar CLSI format	4
	SS	Select Codabar CX format	5
	SS	Disable start/stop symbol transmission ◆	6
	SS	Enable ABCD/ABCD start/stop symbol transmission	7
	SS	Enable abcd/abcd start/stop symbol transmission	8
	SS	Enable ABCD/TN*E start/stop symbol transmission	9
	SS	Enable abcd/tn*e start/stop symbol transmission	A
	SS	Disable check digit verification ◆	B
	SS	Enable check digit verification	C
	SS	Disable check digit transmission ◆	D
SS	Enable check digit transmission	E	
Codabar Min. Length 	SS	Default (04) ◆	FIN (2 digits)
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
Codabar Max. Length 	SS	Default (98) ◆	FIN (2 digits)
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	



PROGRAM

Symbology Reading Control

◆ UPC-A & UPC-E Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UPC Family Setting 	SS	Disable UPC-A	0
	SS	Enable UPC-A ◆	1
	SS	Disable UPC-E	2
	SS	Enable UPC-E ◆	3
	SS	Disable UPC-E expansion ◆	4
	SS	Enable UPC-E expansion	5
	SS	Disable UPC standardization ◆	6
	SS	Enable UPC standardization	7
	SS	Disable UPC numeric system	8
	SS	Enable UPC numeric system ◆	9
	SS	Disable UPC-A check digit transmission	A
	SS	Enable UPC-A check digit transmission ◆	B
	SS	Disable UPC-E check digit transmission	C
	SS	Enable UPC-E check digit transmission ◆	D
	SS	Disable UPC "leading 1" portion ◆	E
	SS	Enable UPC "leading 1" portion	F

- When enable UPC-E expansion, the UPC-E decoded data will be converted to UPC-A format and affected by related setting, such as UPC standardization, UPC numeric system, UPC-A check digit transmission.




PROGRAM

Symbology Reading Control

◆ UPC-A & UPC-E Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UPC Supplement Setting 	SS	Select UPC without supplement digits ◆	0
	SS	Select UPC with only 2 supplement digits	1
	SS	Select UPC with only 5 supplement digits	2
	SS	Select UPC with 2/5 supplement digits	3
	SS	Disable force supplement digits output ◆	4
	SS	Enable force supplement digits output	5
	SS	UPC Family Addenda Separator Off ◆	6
	SS	UPC Family Addenda Separator On	7

- **UPC-E & EAN-8 Expansion** : Expand the 8-digit UPC-E and 8-digit ENA-8 to 12-digit UPC-A and 13-digit EAN-13.
- **UPC-A Standardization** : Expand the 12-digit UPC-A to 13-digit EAN-13 with 1 zero insertion.
- **UPC Lead 1 Numeric System** : Enable to read UPC leading with the 1 numeric system, you must enable this option.

WPC Selection (UPC/EAN/CAN)	Basic Length	Disable Check Digit	Disable Numeric System	With 2-digit Addendum	With 5-digit Addendum	Enable Standardization	Enable Expansion
UPC-A	12	- 1	- 1	+ 2	+ 5	+ 1	0
UPC-E	8	- 1	- 1	+ 2	+ 5	+ 1	+ 4
EAN-13	13	- 1	NC	+ 2	+ 5	NC	0
EAN-8	8	- 1	NC	+ 2	+ 5	NC	+ 5



PROGRAM

Symbology Reading Control

◆ EAN Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	
EAN Setting 	SS	Disable EAN-13	0	
	SS	Enable EAN-13 ◆	1	
	SS	Disable EAN-8	2	
	SS	Enable EAN-8 ◆	3	
	SS	Disable EAN-8 expansion ◆	4	
	SS	Enable EAN-8 expansion	5	
	SS	Disable EAN-13 check digit transmission	6	
	SS	Enable EAN-13 check digit transmission ◆	7	
	SS	Disable EAN-8 check digit transmission	8	
	SS	Enable EAN-8 check digit transmission ◆	9	
	SS	Disable ISBN/ISSN Conversion reading check ◆	A	
	SS	Enable ISBN/ISSN Conversion reading check	B	
	EAN Supplement Setting 	SS	Select EAN without supplement digits ◆	0
		SS	Select EAN with only 2 supplement digits	1
SS		Select EAN with only 5 supplement digits	2	
SS		Select EAN with 2/5 supplement digits	3	
SS		Disable force supplement digits output ◆	4	
SS		Enable force supplement digits output	5	
SS		EAN Addenda Separator Off ◆	6	
SS		EAN Addenda Separator On	7	




PROGRAM

Symbology Reading Control

◆ UPC/EAN Security Level Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UPC/EAN Security Level 	SS SS SS	Level 0 Level 1 ◆ Level 2 Only available for UPC-A & EAN-13	0 1 2

■ UPC/EAN Security Level

The scanner offers three levels of decode security for UPC/EAN bar codes:

- Level 0: If you are experiencing misread of poorly-printed or out-of-spec. bar codes, especially in characters 1, 2, 7, and 8 in level 1, please select level 0. Selection of this security level may significantly impair the decoding ability of the scanner.
- Level 1: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding “in-spec” UPC/EAN bar codes.
- Level 2: If you are experiencing misread of poorly-printed, soiled or damage bar codes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.




PROGRAM

Symbology Reading Control

◆ UCC Coupon Extended Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UCC Coupon Extended Code 	SS	Disable UCC Coupon Extended Code ◆	0
	SS	Enable UCC Coupon Extended Code	1

▪ UCC Coupon Extended Code

When UCC coupon extended code function is enabled, scanner decodes UPC-A barcodes starting with digit “5”, EAN-13 barcodes starting with digit “99” and UCC/EAN-128 Coupon Codes. UPC-A, EAN-13 and EAN-128 must be enabled to scan all types of Coupon Codes.





PROGRAM

Symbology Reading Control

◆ IATA & Interleaved 2 of 5 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
IATA Setting 	SS	Disable IATA ◆	0
	SS	Enable IATA	1
	SS	Select 15-digit fixed length IATA checking ◆	2
	SS	Select variable length IATA	3
	SS	Disable check digit verification ◆	4
	SS	Enable check digit automatic verification	5
	SS	Enable S/N checking digit verification only	6
	SS	Enable CPN checking digit verification only	7
	SS	Enable CPN, Airline and S/N check digit verification	8
	SS	Disable check digit transmission ◆	9
	SS	Enable check digit transmission	A
	SS	Disable start/stop symbol transmission ◆	B
	SS	Enable start/stop symbol transmission	C
Interleaved 2 of 5 Setting 	SS	Disable Interleaved 2 of 5	0
	SS	Enable Interleaved 2 of 5 ◆	1
	SS	Select Interleaved 2 of 5 as primary format ◆	2
	SS	Select German Postal Code as primary format	3
	SS	No check character ◆	4
	SS	Validate USS check digit	5
	SS	Validate OPCC check digit	6
	SS	Disable check digit transmission ◆	7
	SS	Enable check digit transmission	8



PROGRAM

Symbology Reading Control

◆ Code 25 Family Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 25 Setting 	SS	Disable Standard/Industrial 2 of 5 ◆	0
	SS	Enable Standard/Industrial 2 of 5	1
	SS	Disable Matrix 2 of 5 ◆	2
	SS	Enable Matrix 2 of 5	3
	SS	Disable China Postal Code ◆	4
	SS	Enable China Postal Code	5
	SS	Disable check digit verification ◆	6
	SS	Enable check digit verification	7
	SS	Disable check digit transmission ◆	8
	SS	Enable check digit transmission	9
Code 25 Family Min. Length 	SS MS	Default (04) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)
Code 25 Family Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)

- For Code25 setting, we recommend you to select **only one** type of Code 25 or set the **maximum/minimum bar code length**. To decode all types of Code 25 or to variable length of Code 25 will increase the possibility of reading error.



PROGRAM

Symbology Reading Control

◆ Code 11 & Code 93 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 11 Setting 	SS	Disable Code 11 ◆	0
	SS	Enable Code 11	1
	SS	Disable check digit verification ◆	2
	SS	Select 1-check digit verification	3
	SS	Select 2-check digit verification	4
	SS	Disable check digit transmission ◆	5
	SS	Enable check digit transmission	6
Code 11 Min. Length 	SS	Default (04) ◆	FIN (2 digits)
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
Code 11 Max. Length 	SS	Default (98) ◆	FIN (2 digits)
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
Code 93 Setting 	SS	Disable Code 93	0
	SS	Enable Code 93 ◆	1
	SS	Disable check digit transmission ◆	2
	SS	Enable check digit transmission	3
Code 93 Min. Length 	SS	Default (01) ◆	FIN (2 digits)
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
Code 93 Max. Length 	SS	Default (98) ◆	FIN (2 digits)
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	



PROGRAM

Symbology Reading Control

◆ MSI/Plessey Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
MSI/Plessey Setting 	SS	Disable MSI/Plessey ◆	0
	SS	Enable MSI/Plessey	1
	SS	Select MOD 10 check digit ◆	2
	SS	Select MOD 10-10 check digit	3
	SS	Select MOD 11-10 check digit	4
	SS	Disable check digit transmission ◆	5
	SS	Enable check digit transmission	6
MSI/Plessey Min. Length 	SS	Default (04) ◆	FIN (2 digits)
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
MSI/Plessey Max. Length 	SS	Default (98) ◆	FIN (2 digits)
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	



PROGRAM

Symbology Reading Control

◆ Code 128 & UCC/EAN 128 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 128/EAN-128 Setting 	SS	Disable Code 128 and UCC/EAN-128	0
	SS	Enable Code 128 and UCC/EAN-128 ◆	1
	SS	Disable function code conversion ◆	2
	SS	Enable function code conversion	3
	SS	ISBT Concatenation Off ◆	4
	SS	ISBT Concatenation On	5
Code 128/EAN-128 Min. Length 	SS	Default (01) ◆	FIN (2 digits)
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
Code 128/EAN-128 Max. Length 	SS	Default (98) ◆	FIN (2 digits)
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	



PROGRAM

Symbology Reading Control

◆ UK/Plessey Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UK/Plessey Setting 	SS	Disable UK/Plessey ◆	0
	SS	Enable UK/Plessey	1
	SS	Select UK/Plessey Standard Format ◆	2
	SS	Select UK/Plessey CLSI Format	3
	SS	Disable Convert X to A-F ◆	4
	SS	Enable Convert X to A-F	5
	SS	Disable check digit transmission ◆	6
	SS	Enable check digit transmission	7
UK/Plessey Min. Length 	SS MS	Default (04) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)
UK/Plessey Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)



PROGRAM

Symbology Reading Control

◆ Telepen Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Telepen Setting 	SS SS SS SS SS SS	Disable Telepen ◆ Enable Telepen Select Telepen Numeric mode ◆ Select Telepen Full ASCII mode Disable check digit transmission ◆ Enable check digit transmission	0 1 2 3 4 5
Telepen Min. Length 	SS MS	Default (04) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)
Telepen Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)



PROGRAM

Symbology Reading Control

◆ GS1 DataBar Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
GS1 DataBar Setting 	SS	Disable GS1 DataBar (RSS-14)	0
	SS	Enable GS1 DataBar (RSS-14) ◆	1
	SS	Disable GS1 DataBar Limited	2
	SS	Enable GS1 DataBar Limited ◆	3
	SS	Disable GS1 DataBar Expanded	4
	SS	Enable GS1 DataBar Expanded ◆	5
GS1 DataBar Min. Length 	SS	Default (04) ◆	FIN (2 digits)
	MS	01-Maximum Only available for Expanded GS1 Databar. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
GS1 DataBar Max. Length 	SS	Default (74) ◆	FIN (2 digits)
	MS	74-Minimum Only available for Expanded GS1 Databar. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	



PROGRAM

Symbology Reading Control

◆ Linear-stacked & Korea Post Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Composite Codes Setting 	SS SS SS SS	Disable composite codes ◆ Enable composite codes UPC Composite Mode: UPC never linked ◆ UPC Composite Mode: UPC always linked	0 1 2 3
PDF417/MicroPDF417 Setting 	SS SS SS SS	Disable PDF417 Enable PDF417 ◆ Disable MicroPDF417 ◆ Enable MicroPDF417	0 1 2 3
Codablock F Setting 	SS SS	Disable ◆ Enable	0 1
Korea Post Code Setting 	SS SS	Disable ◆ Enable Length fixed in 6 characters.	0 1

■ Composite Codes Setting

If UPC Composite Mode: UPC never linked is selected, UPC barcodes are transmitted regardless of whether a MicroPDF417 symbol is detected.

If UPC Composite Mode: UPC always linked is selected, UPC barcodes are only transmitted when the MicroPDF417 is detected.



PROGRAM

Keyboard Interface Control

◆ Keyboard Layout (Language) Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Keyboard Layout 	SS	USA (QWERTY) ◆	00
	SS	France (AZERTY)	01
	SS	Germany (QWERTZ)	02
	SS	United Kingdom - UK (QWERTY)	03
	SS	Canadian French (QWERTY)	04
	SS	Spain (QWERTY)	05
	SS	Sweden/Finland (QWERTY)	06
	SS	Portugal (QWERTY)	07
	SS	Norway (QWERTY)	08
	SS	Latin America (QWERTY)	09
	SS	Italy (QWERTY)	10
	SS	Netherlands (QWERTY)	11
	SS	Denmark (QWERTY)	12
	SS	Belgium (AZERTY)	13
	SS	Switzerland-Germany (QWERTY)	14
SS	Iceland (QWERTY)	15	
SS	Japan (DOS/V)	16	
SS	Universal * (see note)	99	

- The “**Universal Selection**” is only for PC/AT, PS/VP, PS/2 and compatible ones in **DOS** or **Windows** environment which can perform unique output **without** Caps Lock on/off (Output Style) concern. All transmitted data will follow the original full ASCII form. You also need not worry about the upper/lower case control.
- Please refer to the **ASCII/HEX Table** listed in the Appendix to determine HEX codes for characters, symbols, and functions to be used as preamble or postamble.
- To set preamble or postamble as function key output, you must enable the “**Function Key Emulation**” feature as listed in page 3-25 first.
- **Keyboard Interface Message String :**

Preamble	Data Length	Prefix Symbol ID	Scanned Data	Suffix Symbol ID	Postamble	Record Suffix
1-15 characters	2-3 digits	1 or 2 characters	Variable length	1 or 2 characters	1-15 characters	1 character








PROGRAM

Keyboard Interface Control

◆ Record Suffix, Preamble, Postamble & Caps Lock ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Record Suffix 	SS SS SS SS SS SS	None RETURN ◆ TAB SPACE ENTER (Numeric Key Pad) User defined character (1 character)	0 1 2 3 4 5, (00-7F)
Preamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Postamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Caps Lock Control 	SS SS SS	"Caps Lock Off" State ◆ "Caps Lock On" State Auto Detect (PC/AT, PS/2, Keyboard Replacement and DOS/V Machines only)	0 1 2
Caps Lock Release Control 	SS SS	"Caps Lock On, Caps Off" ◆ "Caps Lock On, Shift Off"	0 1

- The function of "Caps Lock Control" and "Key Pad Emulation" are **only** available for IBM PC/AT, PS/VP, PS/2 series personal computers and compatible machines. While selecting the other host interfaces, these selections don't perform the above functions for you.
- Please check the **actual** Caps Lock state in use while software application is running. If the Caps Lock state is off, select "**Caps Lock Off**" state, then FuzzyScan will perform normal data transmission. If the Caps Lock state is on, select "**Caps Lock On**" state. Select "**Auto Detect**", FuzzyScan will perform special transmission handshaking without changing the status of Caps Lock switch.



PROGRAM

Keyboard Interface Control

◆ Delay Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Intermessage Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)
Intercharacter Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)
Interfunction Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)

- **Intermessage Delay** is a time delay between messages output by FuzzyScan. Increasing this delay will help host applications process the incoming data on time.
- **Intercharacter Delay** is a time delay between data characters output by FuzzyScan. These two parameters are used to synchronize data communication when : 1) the data transmission speed is too fast, characters may be skipped; 2) multitasking operation system or host computers in a network may slow down the keyboard handling; 3) various notebook or desktop PC systems require different timing parameter settings. Please always add one extra unit as safety margin when adjusting these two parameters.
- **Interfunction Delay** is a time delay between the transmission of each segment of the message string.



PROGRAM

Keyboard Interface Control

◆ Emulation Setting & Upper/Lower Case Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Function Key Emulation 	SS SS	Enable ASCII 00-31 code as keyboard function code output ◆ Ctrl-Output Refer to Appendix – Keyboard Function Code Table for details.	0 1
Key Pad Emulation 	SS SS	Disable key pad emulation ◆ Enable numeric output as key pad (Num Lock On) output	0 1
Upper/Lower Case 	SS SS SS SS	Normal case (neglect the upper/lower case control) ◆ Inverse case (change all characters output to inverse case) Upper case (force all characters output as upper case) Lower case (force all characters output as lower case)	0 1 2 3



PROGRAM

Serial Interface Control

◆ Record Suffix, Preamble ,Postamble Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
STX/ETX Control 	SS SS	Disable STX/ETX transmission ◆ Enable STX/ETX transmission STX/ETX are two characters used to indicate the starting and ending of the total data frame transmitted via serial interface.	0 1
Record Suffix 	SS SS SS SS SS SS MS	None CR (0DH) ◆ LF (0AH) CRLF (0D0AH) TAB (09H) SPACE (20H) User defined character (1 character)	0 1 2 3 4 5 6, (00-7F)
Preamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Postamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]

▪ Serial Interface Message String (RS232, USB COM) :

STX	Preamble	Data Length	Prefix Symbol ID	Scanned Data	Suffix Symbol ID	Postamble	ETX	Record Suffix
1 character	1-15 characters	2-3 digits	1 or 2 characters	Variable length	1 or 2 characters	1-15 characters	1 character	1 character



PROGRAM

Serial Interface Control

◆ Delay Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Intermessage Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)
Intercharacter Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)
Interfunction Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)

- **Intermessage Delay** is a time delay between messages output by FuzzyScan. Increasing this delay will help host applications process the incoming data on time.
- **Intercharacter Delay** is a time delay between data characters output by FuzzyScan. These two parameters are used to synchronize data communication when : 1) the data transmission speed is too fast, characters may be skipped; 2) multitasking operation system or host computers in a network may slow down the keyboard handling; 3) various notebook or desktop PC systems require different timing parameter settings. Please always add one extra unit as safety margin when adjusting these two parameters.
- **Interfunction Delay** is a time delay between the transmission of each segment of the message string.



PROGRAM

Serial Interface Control

◆ Protocol, Baud Rate, Data Frame & Time Out Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
Handshaking Protocol 	SS SS SS SS	None (free running mode) ◆ RTS/CTS (hardware handshaking) ACK/NAK (software handshaking) Xon/Xoff (software handshaking)		0 1 2 3	
Baud Rate (BPS) 	SS SS SS SS SS	38.4K BPS 19.2K BPS 9600 BPS ◆ 4800 BPS 2400 BPS	1200 BPS 600 BPS 300 BPS 57.6K BPS 115.2K BPS	0 1 2 3 4	5 6 7 8 9
Data Frame 	SS SS SS SS SS SS SS SS	8, None, 1 ◆ 8, Odd, 1 8, Even, 1 8, Space, 1 8, Mark, 1 8, None, 2 7, Odd, 1 7, Even, 1	7, Space, 1 7, Mark, 1 7, None, 2 7, Odd, 2 7, Even, 2 7, Space, 2 7, Mark, 2	0 1 2 3 4 5 6 7	8 9 A B C D E
Serial Response Time-out 	SS SS SS MS	None 200 mseconds 500 mseconds ◆	1 second 2 seconds 5 seconds User defined value (seconds)	0 1 2	3 4 5 6, (2 digits)

- When the **RTS/CTS Hardware Handshaking** option is selected, the **RTS** (request to send) and **CTS** (clear to send) signals will be issued before normal data communication. This option is very helpful to ensure the reliability of data communication.
- When the **ACK/NAK Software Handshaking** option is selected, the FuzzyScan waits for an **ACK** (acknowledge) or **NAK** (not acknowledge) from the host computer after each data transmission. If the NAK is received, FuzzyScan will re-send the data until receiving ACK.
- The **Serial Response Time-out** is a pre-defined delay time for FuzzyScan to wait for handshaking, acknowledgment or non-acknowledgment from the host computer.



PROGRAM

Wand/Laser Emulation Control

◆ Output Polarity, Signal State, Margin/Module Time, etc. ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
Output Polarity 	SS SS	High level (5Vdc) on Bar (low level on Space) ◆ Low level (0Vdc) on Bar (high level on Space)		0 1	
Determine the output voltage level for both bar and space.					
Initial Signal State 	SS SS	High Level (5Vdc) ◆ Low Level (0Vdc)		0 1	
Determine the initial state of output voltage level.					
Margin Time 	SS SS SS SS	10 msec. 15 msec. 20 msec. ◆ 25 msec.	30 msec. 50 msec. 100 msec. Delay time before data transmission	0 1 2 3	4 5 6
Module Time 	SS SS SS	Extremely short Short Medium ◆	Long Time base of minimum narrow bar	0 1 2	3
Narrow/Wide Ratio 	SS SS SS	1:2 ◆ 1:2.5 1:3		0 1 2	
Code 39/Code 128 Emulation 	SS SS SS SS SS	Disable standard Code 39 emulation ◆ Enable standard Code 39 skip emulation Enable standard Code 39 replace emulation Enable Full ASCII Code 39 emulation Enable Code 128 emulation		0 1 2 3 4	

▪ [Code 39 Skip] : When this option is selected, all scanned data will be translated as Standard Code 39 wand/laser emulation output. If any lower case characters are read, they will be translated to upper case characters. Any other characters that are not available in Code 39 symbology set will be **skipped**.

▪ [Code 39 Replace] : Any character not normally available in the standard Code 39 symbology set, will be translated as **Space**.



PROGRAM

Operation Control

◆ Operation Mode Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
Operation Mode 	SS	Low Power mode	Force mode	0	5
	SS	Trigger mode ◆	Toggle mode	1	6
	SS	Presentation mode	Diagnostic mode	2	7
	SS	Alternative mode	Level mode	3	8
	SS	Flash mode		4	
Presentation Control 	SS	Presentation mode ◆		0	
	SS	Flash mode		1	
	SS	Force mode		2	

- **Lower Power Mode (Low Power Triggering)** The scanner goes into idle state after scanning the bar code. You must press the trigger to wake up the scanner for operation. It is very helpful for mobile data collection and application, which are concerned with power saving.
- **Trigger Mode (External Triggering)** The scanner goes into standby state after scanning the bar code. You must press the trigger to turn on the light source of the scanner before scanning the bar code.
- **Presentation Mode (Auto Detection)** Presentation mode uses ambient light to detect the bar codes. The light source is off until the scanner detects an image which is similar to a barcode. Then the light source turns on automatically to read the bar code. If the light level in the room is not high enough, Presentation Mode may not work properly. You can choose different level of "Presentation Sensitivity" to meet your application (Please refer to the setting of "Presentation Sensitivity").
- **Alternative Mode (Periodic Power Off)** The scanner keeps the light source of the scanner turned on till the pre-defined light source on time is up. After the scanner turns off the light source, you must press the trigger to turn on the light source again. After each good read, the timer counter of "Light Source on Time" is reset. You do not have to press the trigger frequently, it is very convenient for multiple scanning.
- **Flash Mode (Pulse Driven Reading)** The scanner flashes the light source of the scanner without using the trigger. If the scanner detects an image which is similar to a bar code, the scanner forces on the light source automatically and scans the bar code. Flash Duty Cycle adjustment can change the frequency of the blinking.
- **Force Mode (Continued Power On)** The light source of the scanner is forced on for continued operation without pressing the trigger switch. This mode is convenient for high speed bar code reading.
- **Toggle Mode (Repeat Reading)** The toggle mode is very similar to the Alternative Mode but without the pre-defined light source on time concern. You must press the trigger to turn on the light source of the scanner to scan. The scanner keeps the light source turned on until you press the trigger again.
- **Diagnostic Mode (Test Reading)** This operation mode is specifically designed for diagnostic purposes. When this operation mode is selected, the light source of the scanner is force on without regard for other programmable parameters, such as reread delay, redundancy, and so forth.
- **Level Mode (Auto Power Off)** When this operation mode is selected, the scanner continues to turn on the light source of the scanner before a good read or pre-defined "Light Source on Time". If the scanner decodes a bar code successfully, it turns off the light source immediately. After the scanner turns off the light source, you must press the trigger to turn on the light source again. If there is no scanning operation performed during the pre-defined light source on time, the scanner enters the idle state after the pre-defined light source on time is up.
- **Presentation Control** When the scanner is placed on SmartStand, the scanner will be switched from hand-held scanning to hands free scanning automatically. Three hands scanning modes are available. You are recommended to use flash mode or force mode while under insufficient ambient light.
- Only **Lower power mode, Trigger mode, Presentation mode** and **Level mode** are available for FuzzyScan Laser model.



PROGRAM

Operation Control

◆ Buzzer, Indicator, Vibrator, Inverse Reading, Dollar Sign ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Buzzer Tone Adjust 	SS SS SS SS SS SS SS	Buzzer tone – mute Buzzer tone – low Buzzer tone – medium ◆ Buzzer tone – high Buzzer tone - extremely high Power-on beep ◆ No power-on beep	0 1 2 3 4 5 6
Power On Indicator 	SS SS	Disable (LED off) LED steady on ◆ LED flash	0 1 2
Vibrator Control 	SS SS	Disable Enable ◆ Optional function, only available for vibrator model.	0 1
Inverse Reading 	SS SS	Disable ◆ Enable	0 1
Dollar Sign Control 	SS SS SS SS SS	Dollar sign output as “ \$ ” ◆ Dollar sign output as “ ¥ ” Dollar sign output as “ € ” Dollar sign output as “ £ ” Dollar sign output as “ ¢ ”	0 1 2 3 4



PROGRAM

Operation Control

◆ Flash Duty Cycle, Redundancy, Delay Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Flash Duty Cycle 	SS SS SS SS	1/2 duty cycle ◆ 2/3 duty cycle 3/4 duty cycle 4/5 duty cycle	0 1 2 3
Redundancy (Scan Voting) 	SS SS SS SS SS SS	None Level 1 ◆ Level 2 Level 3 Level 4 Level 5 To prevent potential miss reading.	0 1 2 3 4 5
Reread Delay (Double Scan Verification) 	SS SS SS SS SS SS	Disable Immediate time out ◆ Short time out Medium time out Long time out Force verification	0 1 2 3 4 5
Good Read Delay 	SS SS SS SS SS SS	None ◆ 200 msec. 500 msec. 1 sec. 1.5 sec. 2 sec. 3 sec.	0 1 2 3 4 5 6

- The **Flash Duty Cycle** is designed to control the flashing frequency of the light source.
- The **Redundancy** is the number of times the same bar code label has to be decoded before it is transmitted.
- The **Reread Delay (Double Scan Verification)** is designed to inhibit FuzzyScan from reading the same bar code label twice in pre-defined short duration. Force Verification will not allow reading of the same bar code twice.
- This **Good Read Delay** is the minimum amount of time before the imager can read another bar code.



PROGRAM

Operation Control

◆ Time-out Setting, Good Read Beep Duration ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Light Source On Time 	SS SS SS SS	Short ◆ Medium Long Extremely long	0 1 2 3
Hands Free Time-out 	SS SS SS SS SS	Short ◆ Medium Long Extremely long Disable	0 1 2 3 4
Good Read Duration 	SS SS SS SS SS	Short Medium ◆ Long Extremely long Extremely short	0 1 2 3 4
Time Delay to Low Power Mode 	SS SS SS SS SS SS	1 sec 3 secs 5 secs 7 secs 9 secs Immediate ◆	0 1 2 3 4 5

- The **Light Source On Time** is a pre-defined light source time out counter for Alternative Mode, Presentation Mode and Level Mode. The scanner keeps the light source on till the pre-defined light source on time is up. You can adjust this parameter to meet your own application requirement.
- The Presentation Mode, Force Mode and Flash Mode are referred to as “hands free” mode. The hands free mode will be automatically changed to manual trigger mode when you press the trigger. You can remain the scanner in manual trigger mode by setting the **Hands Free Time-Out**. Once the time-out duration is up (if there’s no any trigger operation), the imager will revert to the original hands free mode.
- The **Time Delay to Low Power Mode** sets the time for scanner to enter low power mode after any scanning activity. This setting is only available for the scanner is in low power mode.







PROGRAM

Operation Control

◆ Presentation Scanning Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
SmartStand Power Off Timeout 	SS SS SS	3 mins ◆ 5 mins 10 mins			0 1 2
Only available for FuzzyScan Laser model					
Presentation Auto-sense 	SS SS	Disable Enable ◆			0 1
Presentation Sensitivity 	SS SS SS SS SS	Level 1 Level 2 Level 3 Level 4 Level 5 ◆	Level 6 Level 7	0 1 2 3 4	5 6
Trigger Control 	SS SS SS	Enable left trigger, disable right trigger Enable right trigger, disable left trigger Enable left and right triggers ◆			0 1 2
Only available for FuzzyScan F460/F468O					

- The SmartStand Power Off Timeout is a pre-defined duration for scanner's light source on time when the scanner is placed on SmartStand. While the scanner is placed on SmartStand, the scanner's will be switched from hand-held scanning to presentation scanning and the light source will be forced on automatically. The light source will be off when the pre-defined duration is up.
- When enable the **Presentation Auto-sense**, the scanner can be switched between hands free scanning and hand-held scanning automatically when working with the SmartStand.
- The presentation sensitivity is used to configure the sensitivity level when the scanner is set as presentation mode. The higher lever means higher sensitivity for detecting the barcode.







PROGRAM

Condensed DataWizard

◆ Preamble, Postamble, Data Length & Symbol ID Trans. ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Preamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Postamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Data Length Transmission 	SS SS	Disable ◆ Enable 2 digits data length transmission If data length exceeds 99, 3-digit data length will be transmitted.	0 1
Symbology ID Transmission 	SS SS SS SS SS SS SS	Disable symbology ID transmission ◆ Enable prefix symbology ID transmission Enable suffix symbology ID transmission Enable both prefix and suffix symbology ID transmission Enable prefix AIM symbology ID transmission Enable suffix AIM symbology ID transmission Enable both prefix and suffix AIM symbology ID transmission	0 1 2 3 4 5 6

- **DataWizard** is the most powerful, Artificial-Intelligence based data editing expert system provided specially for the FuzzyScan family bar code readers. Through DataWizard, you can process the scanned data prior the transmissions in many ways as: **Insert, Delete, Match, Verify, Replace, Reorganize, and Repeat Transmission**. It will help you to arrange the transmission of scanned data to any specific format without software modification.
- Due to the resources used by this system, **Full-feature DataWizard** is only supported by **PowerTool**. Through the PowerTool, all settings and configurations can be done on-screen, under Windows 95/98/NT/2000/XP environment.
- A **Condensed Version DataWizard** is provided by each FuzzyScan series. Through this menu, the condensed DataWizard can be utilized via bar code menu readings with ease.
- Please note that all "Character" input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.
- If you have any problem to use DataWizard, please refer to following pages for details and consult your local FuzzyScan vendor or our web site for any assistance.



PROGRAM

Condensed DataWizard

◆ Data Formatter Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Formatter Control 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
1st Insertion 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
2nd Insertion 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
3rd Insertion 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
4th Insertion 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]

- The **Data Formatter** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for formatter control, and provides **Multiple Position Insertion** and **Multiple Character Insertion** (max three characters) in the identified position.
- While the Data Formatter is enabled, it arranges only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**. All of the above programmable parameters perform the same function depending on your setting.
- Regarding the “**Bar Code Selection**” and “**Position Calculation**” of data formatter, please refer to page 45 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.



PROGRAM

Condensed DataWizard

◆ Data Verifier Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Verifier Control 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
Identified Data Length 	SS DS	Disable ◆ Enable Determine the identified data length for verification.	FIN (2 digits)	
1st Identified Character 	SS DS	Disable ◆ Enable 2-digits checking position; 1 identified character	FIN (2 digits) position	[00-7F]
2nd Identified Character 	SS DS	Disable ◆ Enable 2-digits checking position; 1 identified character	FIN (2 digits) position	[00-7F]
3rd Identified Character 	SS DS	Disable ◆ Enable 2-digits checking position; 1 identified character	FIN (2 digits) position	[00-7F]

- The **Data Verifier** is used to provide advanced verification for error-free scanning and to work as an **Embedded Data Transmitting Filter**.
- All data must conform to the **Identified Bar Code Symbologies**, **Identified Data Length**, and one to three **Identified Characters** in the checking position. Otherwise, the FuzzyScan will not transmit the data to the host computers or terminals, but will instead issue **3 long beeps** for verification error and **skip** the scanned data.
- The Data Verifier checks only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the “**Bar Code Selection**” and “**Position Calculation**” of **Data Verifier**, please refer to page 45 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.



PROGRAM

Condensed DataWizard

◆ Data Replacer Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Replacer Control 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
1st Replacement 	SS DS	Disable ◆ Enable 2-digits identified position; 1 replacement character	FIN (2 digits) position	[00-7F]
2nd Replacement 	SS DS	Disable ◆ Enable 2-digits identified position; 1 replacement character	FIN (2 digits) position	[00-7F]
3rd Replacement 	SS DS	Disable ◆ Enable 2-digits identified position; 1 replacement character	FIN (2 digits) position	[00-7F]

- The **Data Replacer** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for replacer control, and provides **Multiple Position Replacement** in the identified position.
- All data must conform to the **Identified Bar Code Symbologies**, and one to three **Identified Characters** in the identified position. While the Data Replacer is enabled, it arranges only scanned data without **Preamble, Postamble, STX, ETX, Data Length, Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the “**Bar Code Selection**” and “**Position Calculation**” of Data Replacer, please refer to page 45 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.



PROGRAM

Condensed DataWizard

◆ Data Organizer Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Organizer Control 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
1st Organization 	SS DS	Disable ◆ Enable 2-digits identified position; Forward/backward data transmission setting	FIN (2 digits) position direction	0 (Forward) ◆ 1 (Backward)
2nd Organization 	SS DS	Disable ◆ Enable 2-digits identified position; Forward/backward data transmission setting	FIN (2 digits) position direction	0 (Forward) ◆ 1 (Backward)
Include/Exclude Control 	SS DS	Transmitted data excluded the data of identified position ◆ Transmitted data included the data of identified position	0 1	

- The **Data Organizer** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for organizer control, and provides maximum two identified positions to send the data **forward** or **backward**. It also allows you to control the transmitted data **including** or **excluding** the data of identification position. Please refer to the application example listed in page 45 for details.
- While the Data Organizer is enabled, it arranges only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the “**Bar Code Selection**” and “**Position Calculation**” of Data Organizer, please refer to page 45 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table**.



Select a Bar Code Symbology

You can select one or all types of bar code symbologies to use Condensed DataWizard for advanced transmission arrangement. If you scan “00” to select all types, the FuzzyScan will arrange all incoming data to meet your pre-defined format. If you want to select only one type bar code, please select one of the option code listed below.

Code 128 : 01	EAN-8 : 05	Code 93 : 09
UCC/EAN 128 : 31	EAN-8 with 2 suppl. : 35	Code 11 : 10
UPC-A : 02	EAN-8 with 5 suppl. : 45	MSI/Plessey : 11
UPC-A with 2 suppl. : 32	Codabar/NW-7 : 06	UK/Plessey : 12
UPC-A with 5 suppl. : 42	Code 39 : 07	Telepen : 13
UPC-E : 03	Code 32 : 37	GS1 Data Bar : 14
UPC-E with 2 suppl. : 33	Trioptic Code 39 : 47	IATA : 15
UPC-E with 5 suppl. : 43	Matrix 2 of 5 : 38	Coupon Code : 16
EAN-13 : 04	Interleaved 2 of 5 : 48	PDF417/MicroPDF417 : 22
EAN-13 with 2 suppl. : 34	China Postal Code : 58	Codablock : 23
EAN-13 with 5 suppl. : 44	German Postal Code : 68	Korea Post Code : 26

Position Calculation

[Data Formatter]

If there is a 5-character input data string, refer to the following to calculate the actual position for insertion:

	X		X		X		X		X	
00	01	02	03	04	05					

[Data Verifier, Data Replacer, Data Organizer]

If there is a 11-character data string, please refer to the following to calculate the actual position for identification.

X	X	X	X	X	X	X	X	X	X	X
00	01	02	03	04	05	06	07	08	09	10

Application Example

If your bar code label is a 16-digit Interleaved 2 of 5 which includes the information of 6-digit date code, 6-digit serial number and 4-digit unit price, you want the FuzzyScan do the following for you without software modification:

- Apply only Interleaved 2 of 5 to the condensed DataWizard.
- Check bar code is actually with 16-digit length.
- Allow bar code output whose date code is leading with “g”.
- Three outputs with “TAB” suffix.
- The date code output should skip “9” and replaced it by “A”.
- The serial number output should be led with “SN”.
- The unit price output should be skipped the first 2 digits.
- Test Bar Code : **9 8 1 0 2 5 1 2 3 4 5 6 9 8 7 6**
- Actual Output : **A81025[TAB]SN123456[TAB]76[TAB]**

Programming Procedure

[Data Verifier]

- Scan “Program” to enter the programming mode.
- Scan “Verifier Control” and set bar code symbology to “**48**” (Interleaved 2 of 5).
- Scan “Identified Data Length” and set the length to “**16**”.
- Scan “1st Identified Character” and set the identified position to “**00**”, then set the identified character to “**39**” (Hex Code of 9).

[Data Formatter]

- Scan “Formatter Control” and set bar code symbology to “**48**”.
- Scan “1st Insertion” and set the identified position to “**06**”, then inserted characters to “**09**” (Hex Code of TAB), “**53**” (Hex Code of S), “**4E**” (Hex Code of N).
- Scan “2nd Insertion” and set the identified position to “**12**”, then inserted character to “**09**”. In the final, you must scan “**FIN**” (Finish) code to terminate this selection.
- Scan “3rd Insertion” and set the identified position to “**16**”, then inserted character to “**09**”. In the final, you must scan “**FIN**” (Finish) code to terminate this selection.

[Data Replacer]

- Scan “Replacer Control” and set bar code symbology to “**48**”.
- Scan “1st Replacement” and set the identified position to “**00**”, then replaced character to “**41**” (Hex Code of A).

[Data Organizer]

- Scan “Organizer Control” and set bar code symbology to “**48**”.
- Scan “1st Organization” and set the identified position to “**16**”, then set the data transmission to “**0**” (forward).
- Scan “2nd Organization” and set the identified position to “**17**”, then set the data transmission to “**1**” (backward).
- Scan “**END**” (Exit) to terminate the programming.

[Important Notice]

Please note that Condensed DataWizard will follow the preset working flow as below:

Verifier ► Formatter ► Replacer ► Organizer

So when you set the identified position in Data Organizer, you must consider the inserted data which you already set via Data Formatter.

Symbology ID Table

Each AIM Code Identifier contains the three-character string **Jcm** where:

J = Flag Character


c = Code Character

m = Modifier Character

Code Family	Primary Format	Cino ID	AIM ID		Code Family	Primary Format	Cino ID	AIM ID	
		Code Character	Code Character	Modified Character			Code Character	Code Character	Modified Character
UPC	UPC-A	A	E	m	EAN/JAN	EAN/JAN-8	N	E	4
	UPC-A with 2 suppl.			1		EAN/JAN-8 with 2 suppl.			1
	UPC-A with 5 suppl.			2		EAN/JAN-8 with 5 suppl.			2
	UPC-E	E		m		EAN/JAN-13	F	E	m
	UPC-E with 2 suppl.			1		EAN/JAN-13 with 2 suppl.			1
	UPC-E with 5 suppl.			2		EAN/JAN-13 with 5 suppl.			2
	Example: A UPC-A bar code 012345678950 with 2 supplement 12 is transmitted as JE0012345678950JE112					Example: A EAN/JAN-8 bar code 49123562 with 5 supplement 12345 is transmitted as JE449123562JE212345			
Code 128	Code 128	B	C	m	Code 93	Code 93	H	G	m
	UCC/EAN-128	C		1	Code 11	Code 11	P	H	m
Codabar	Codabar/NW-7	D	F	m	MSI/Plessey	MSI/Plessey	R	M	m
Code 25	Standard/Industrial 2 of 5	I	S	0	UK/Plessey	UK/Plessey	S	P	0
	Matrix 2 of 5	K	X	0	Telepen	Telepen	T	B	m
	Interleaved 2 of 5	J	I	m	GS1 DataBar	GS1 Databar	X	e	0
	China Postal Code	L	X	0	Compoite	Composite Code			
	German Postal Code	M	I	3	Code 39	Code 39	G	A	m
				Code 39 Trioptic		W	X	0	
IATA	IATA	O	R	m		Code 32	G	A	0
UCC Coupon	UCC Coupon Code	Z			PDF417	PDF417/Micro PDF417	V	L	0
	Example : A UPC-A 512345678900 + UCC/EAN-128 81010123451297 bar code is transmitted as JE0512345678900JC181010123451297				Codablock	Codablock F	Y	O	0
	Example: A EAN-13 9923456789019 + UCC/EAN-128 81010123451297 bar code is transmitted as JE09923456789019JC181010123451297				Korea Post	Korea Post Code	a	X	0
Remark: Above examples are given for the transmission of AIM ID.									

Keyboard Function Code Table

No.	ANSI	ASCII	Key Function	No.	ANSI	ASCII	Key Function
00	NUL	00H	RESERVED	16	DLE	10H	F7
01	SOH	01H	CTRL (Left)	17	DC1	11H	F8
02	STX	02H	ALT (Left)	18	DC2	12H	F9
03	ETX	03H	SHIFT	19	DC3	13H	F10
04	EOT	04H	CAPS LOCK	20	DC4	14H	F11
05	ENQ	05H	NUM LOCK	21	NAK	15H	F12
06	ACK	06H	ESC	22	SYN	16H	INS (Insert) (Edit)
07	BEL	07H	F1	23	ETB	17H	DEL (Delete) (Edit)
08	BS	08H	BACK SPACE	24	CAN	18H	HOME (Edit)
09	HT	09H	TAB	25	EM	19H	END (Edit)
10	LF	0AH	F2	26	SUB	1AH	PAGE UP (Edit)
11	VT	0BH	F3	27	ESC	1BH	PAGE DOWN (Edit)
12	FF	0CH	F4	28	FS	1CH	UP (Edit)
13	CR	0DH	ENTER (CR)	29	GS	1DH	DOWN (Edit)
14	SO	0EH	F5	30	RS	1EH	LEFT (Edit)
15	SI	0FH	F6	31	US	1FH	RIGHT (Edit)

 To emulate the keyboard function key input for user definable parameters, user must configure actual content using the **Reserved ASCII 0 – 31** characters, and also **Enable** the “Function Key Emulation”. Otherwise, the Ctrl output will be done by the scanner. Please refer to the above Keyboard Function Code Table which is for IBM PC/XT/AT, PS/2, PS/VP, COMPAQ PC, HP Vectra PC, Notebook PC, APPLE and PowerMac, and WYSE PC Enhanced or fully compatible machines.

ASCII Input Shortcut

To configure the user definable parameters of FuzzyScan via programming menu, FuzzyScan will ask you to scan your desired ASCII value in **HEX** form. You have to refer to the “**HEX/ASCII Table**” for details.


Example:


If you want the scanned data output leading with a Dollar Sign, you have to set the “Preamble” to “\$”. The configuration procedure is listed below for reference.

- Scan the system command – **PROGRAM** listed on page 3-24 to enter programming mode.
- Scan family code – **PREAMBLE** to select this family.
- Refer to the **Hex/ASCII Table**, you will find the HEX value of “\$” is **24**.
- Scan the option code – **2** listed on the fold out back cover.
- Scan the option code – **4** listed on the fold out back cover.
- Scan the system command – **FIN (Finish)** to terminate Preamble setting.
- Scan the system command – **End** to exit the programming mode for normal operation.

HEX/ASCII Reference Table

H \ L	0	1	2	3	4	5	6	7
0	NUL	DLE	SPACE	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	DEL

 Example : ASCII “A” → HEX “41”; ASCII “a” → “61”

 : High Byte of HEX Value

 : Low Byte of HEX Value

Host Interface Quick Set



RS232 Serial



Keyboard Replacement



◆USB HID Standard Mode



USB HID Turbo Mode



USB Com Port Emulation



PS/2 (DOS/V) KBW Standard Mode



PS/2 (DOS/V) KBW Turbo Mode

Operation Mode Quick Set



Lower Power (Low power trigger)



Force (Continued power on)



Alternative (Periodic power off)



◆Trigger (External triggering)



Toggle (Repeat reading)



Flash (Pulse driven reading)



Presentation (Auto sensing)



Diagnostic (Test reading)



Level (Auto power off)

Option Codes



0



1



2



3



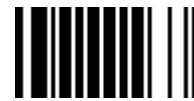
4



5



6



7



8



9



A



B



C



D



E



F



FIN (Finish)



END (Exit)

System Commands



PROGRAM
(Enter Programming Mode)



FIN (Finish)



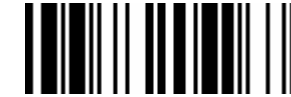
END
(Exit Programming Mode)



Save User Default



User Default



System Information List
(SYSLIST)




PowerTool Host Link



Factory Default



Master Default

- 
Factory Default: After scanning "Factory Default" command, all parameters will be returned to factory default value.
- Master Default:** After scanning "Master Default" command, the scanner will remain the pre-set parameters of **Host Interface Selection**, **Keyboard Interface Control** (except Record Suffix; Preamble; Postamble), **Serial Interface Control** (except Record Suffix; Preamble; Postamble), and **Wand/Laser Emulation Control**, the rest of parameters will be returned to default value.



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FuzzyScan Family Programming Manual

CINO GROUP

PC WORTH INT'L CO., LTD.

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