FUZZYSCAN
BARCODE IMAGER

Programming Manual

International Edition, Rev. A1

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Revision History

Rev. No.	Released Date	Description
Rev.2.0 Beta	Aug. 01, 2008	First Release
Rev.2.1 Beta	Aug. 21, 2008	❖ Page 29 Vibrator – Default value is changed from Disable to Enable. ❖ Page 31 Auto Power Off Duration – Default value is changed from Extremely long to Short ❖ Page 30 Rename "Pulse Driven Duty" to "**Flash Duty Cycle**" ❖ Page 31 Besides Alternative mode, the **Auto Power Off Duration** is also applicable to **Presentation Mode** and **Flash Model**. ❖ Page 31 Besides Force Mode, Presentation Mode, **Flash Mode** is also referred to as "hands free" mode. **Hands Free Time-out setting** is applicable to hands free mode. ❖ Page 31 The Good Read Duration is applicable for Vibration and Beep, not for LED.
Rev.2.2 Beta	Sep. 26, 2008	❖ Page 17 Code128/EAN-128 Setting (Parameter Selection – revise to **Disable/Enable function code conversion** from **Disable/Enable check digit transmission**)

Rev. A	Jan. 20, 2009	❖ Page 8 Host Interface Selection:
		    Add laser emulation and PS/2 (DOS/V) keyboard wedge standard mode.
		    Cancel all IBM keyboard wedge interfaces and DOS/V keyboard direct link.
		    Default value is changed from PS/2 (DOS/V) to USB HID standard mode.
		    Rename the rest of host interfaces.
		❖ Page 9, 11, 14, 15, 38 Cancel all "CAN" Symbology.
		❖ Page 9 User Define Symbol ID
		    Cancel "UPC/EAN with 5 Supplement" and "UPC/EAN with 2 Supplement".
		    Modify "2 character Symbol ID" UPC-E (default=E0) and EAN-8 (default=FF)
		    to "1 character Symbol ID" **UPC-E (default=E)** and **EAN/JAN-8 (default=N)**.
		❖ Page 12 Code39 Family Setting – Cancel "Code39 Append Off" and "Code39 Append On".
		❖ Page 20 GS1 DataBar Setting – Rename the GS1 DataBar Setting Selection.
		❖ Page 22 Add "Caps Lock Release Control".
		❖ Page 23 Cancel "Character Frame Control".
		❖ Page 30 Dollar Sing Control – Add Dollar sign output as "£" and "¢".
		❖ Page 38 Update Condensed DataWizard readable symbology option codes table.

Rev. No.	Released Date	Description
Rev. A1	Mar. 11, 2009	❖ Page 30　Buzzer Tone Adjust – Cancel "Good-read beep before data transmission" and "Good-read beep after data transmission". ❖ Page 30　Vibrator – Modify "Enable" to "**short**", "**medium**", "**long**" and "**extremely long**" vibration duration. ❖ Page 31　Reread Delay – Default value is changed from Short time out to Immediate time out. ❖ Page 32　Rename "Good Read Duration" to "**Good Read Beep Duration**". (This function is only for pre-defined duration of the beep)

Warranty

Cino warrants its products against defects in workmanship and materials from the date of shipment, provided that the product is operated under normal and proper conditions. The warranty provisions and durations are furnished by different warranty programs. The above warranty does not apply to any product which has been (i) misused; (ii) damaged by accident or negligence; (iii) modified or altered by the purchaser or other party; (iv) repaired or tampered by unauthorized representatives; (v) operated or stored beyond the specified operational and environmental parameters; (vi) applied software, accessories or parts are not supplied by Cino; (vii) damaged by circumstances out of Cino's control, such as, but not limited to, lightning or fluctuation in electrical power. Any defective product must follow the warranty program and RMA procedures to return Cino for inspection.

Regulatory

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

FuzzyScan Programming Manual

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Programming Manual

Getting Familiar with your FuzzyScan

Thank you for choosing Cino FuzzyScan Imager. All FuzzyScan Imagers deliver world-class performance for a broad range of market applications to unleash your productivity. This document provides installation and programming instructions for FuzzyScan Imagers.

F400 Series
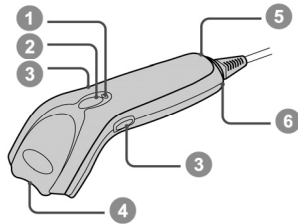
F600 Series
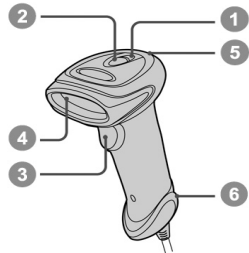
1	Power Indicator
2	Status Indicator
3	Trigger
4	Scan Window
5	Beeper
6	Cable Release Hole

F700 Series
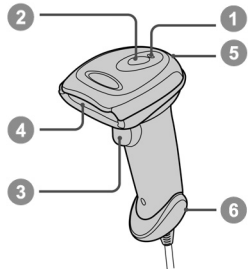
Connecting/Disconnecting Cable

FuzzyScan imagers provide PS/2(DOS/V) Keyboard Wedge, RS-232 Serial, USB interfaces capability. To disconnect the cable, please straighten one end of a paper clip, then insert it into the cable release hole and press in. After that, you can release the cable and pull the cable out easily.

F400 Series

F600 Series

F700 Series

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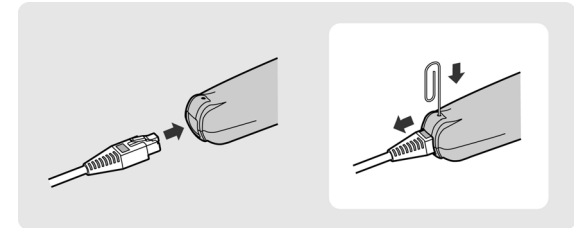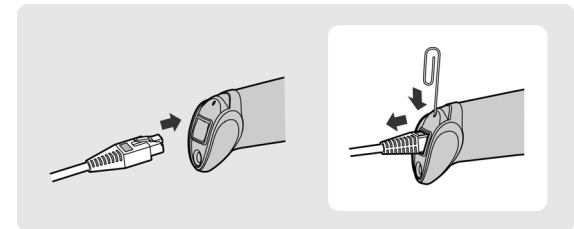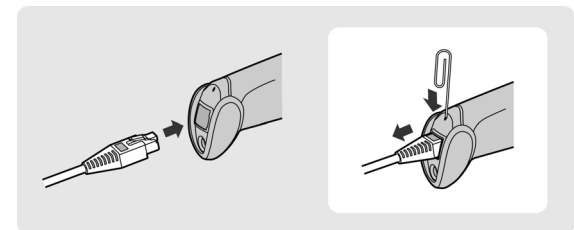
Connecting Host Interface

FuzzyScan imagers have capability to connect different host devices by PS/2(DOS/V) Keyboard Wedge, RS-232 Serial and USB interfaces. Please choose one of the interface cables to connect your host device by referring to the illustrations below.

PS/2(DOS/V) Keyboard Wedge

RS232 Serial

USB

FuzzyScan Programming Manual
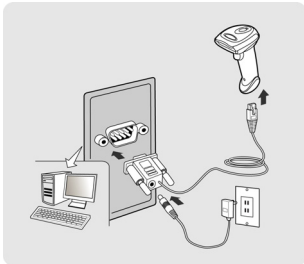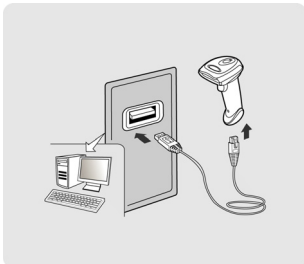
Bar Code Programming Menu

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.

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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** : Signle scan selection **MS** : Multiple scans selection **CS** : Cycling scan selection **DS** : Dual level scan selection
( )	**Necessary Option Code**
[ ]	**Selectable Option Code**

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Program & End

Scan
"**PROGRAM**"

FuzzyScan will enter programming mode,
and inhibit all non-programming functions.

Scan
"**END**"

FuzzyScan will exit programming mode, and store all
parameters in Flash Memory ASIC or non-volatile memory,
then issue the completion beeping.
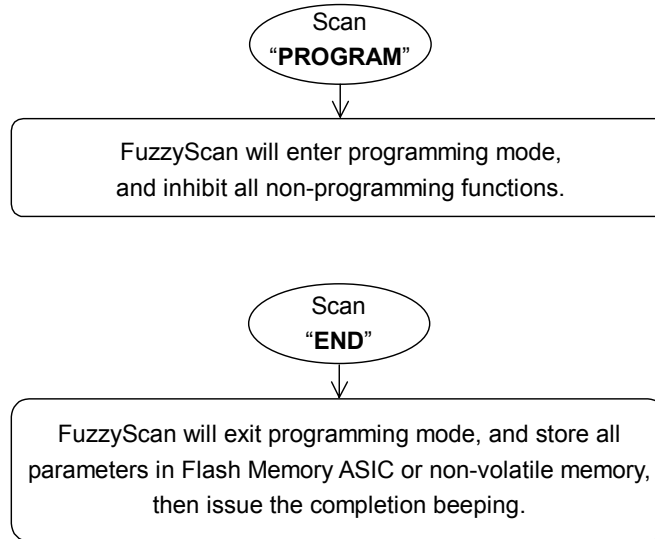
System List, Group & Master Default

Scan
"**SYSLIST**"

FuzzyScan will list the product information and
revision number to host via selected host interface,
then issue the completion beeping.

Scan
"**M_DEFAULT**"

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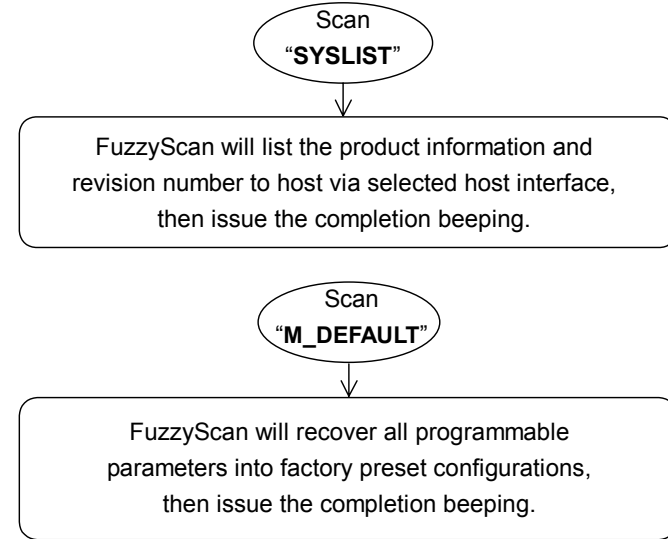
Please note that the FuzzyScan will take 3-4 seconds to store parameters in internal Flash Memory ASIC or non-volatile memory after you scan the "**END**". Please **don't** turn off the power before the completion beeping. It may destroy all configured parameters.

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Single scan selection

Scan
"**PROGRAM**"
→ Enter programming mode.

Scan
One of **Family** Codes
→ Select one of desired
programming families.
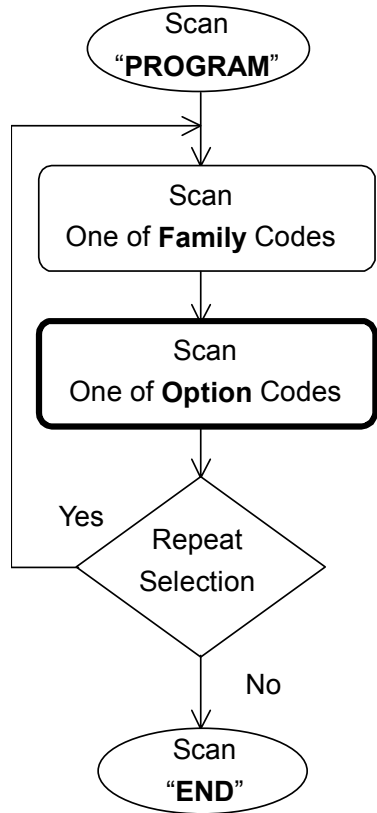
Scan
One of **Option** Codes
→ Select one option code of
desired parameter.

Yes

Repeat
Selection
→ Want to select another
programming family?

No

Scan
"**END**"
→ Exit programming mode.

Multiple scans selection

Scan
"**PROGRAM**"
→ Enter programming mode.

Scan
One of **Family** Codes
→ Select one of desired
programming families.
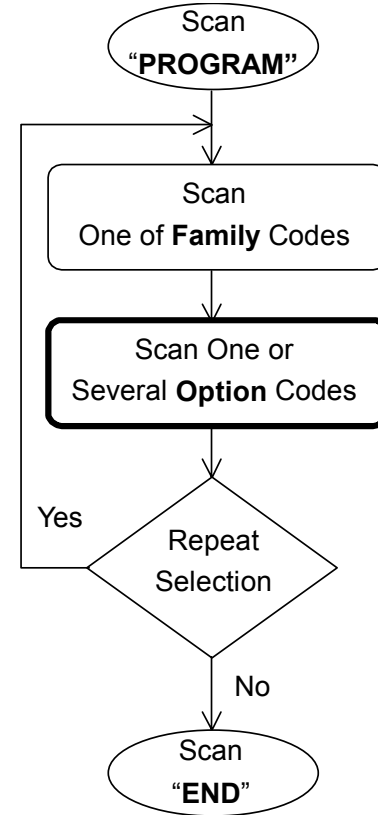
Scan One or
Several **Option** Codes

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

Yes

Repeat
Selection

Want to select another
programming family?

No

Scan
"**END**"
→ Exit programming mode.

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Cycling scan selection
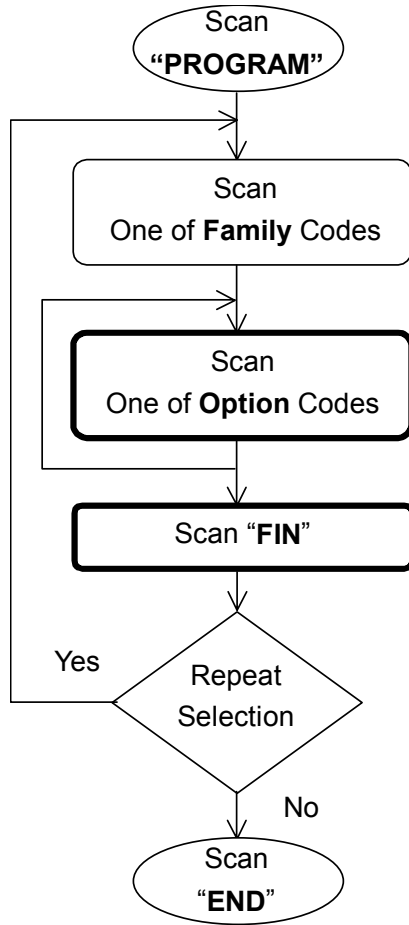
```
   ( Scan "PROGRAM" )          Enter programming mode.

   [ Scan
     One of Family Codes ]     Select one of desired
                               programming families.

   [ Scan
     One of Option Codes ]     Cycling select one or
                               several option codes of
                               desired parameters as
                               "Single" or "Multiple"
                               scans selection.

   [ Scan "FIN" ]              Finish cycling selection.
                               (If necessary)

   < Repeat Selection >        Want to select another
   Yes        No               programming family?

   ( Scan "END" )              Exit programming mode.
```

Dual level selection
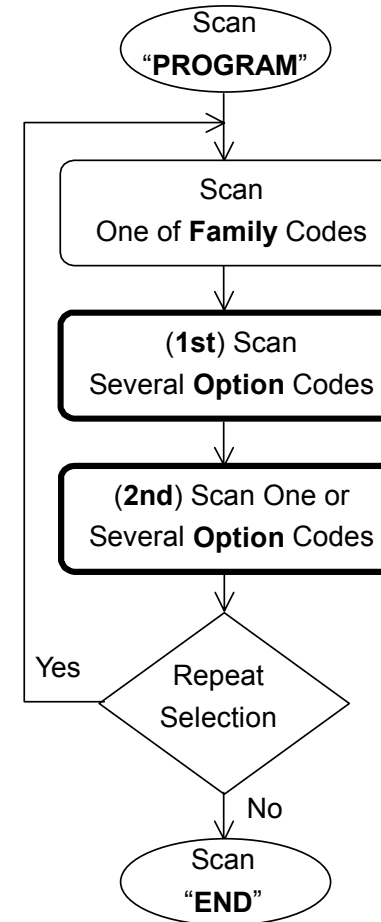
```
   ( Scan "PROGRAM" )          Enter programming mode.

   [ Scan
     One of Family Codes ]     Select one of desired
                               programming families.

   [ (1st) Scan                Select several option codes
     Several Option Codes ]    of desired parameters.

                               1. Select one or several
   [ (2nd) Scan One or            option codes of desired
     Several Option Codes ]       parameters.

                               2. If it's necessary, scan
                                  "FIN" to terminate
                                  option code selection.

   < Repeat Selection >        Want to select another
   Yes        No               programming family?

   ( Scan "END" )              Exit programming mode.
```

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Host Interface Selection

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Host Interface Selection	MS	Standard/TTL RS-232 peer-to-peer serial	06
	MS	Wand emulation	08
	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

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Symbology Reading Control

♦ **User Defined Symbol ID** ♦

PROGRAM

M_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/JAN-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/JAN-8 (default=**N**)	19	(1 character)

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Symbology Reading Control

♦ **Symbology ID Transmission** ♦

PROGRAM

M_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

Symbology Reading Control

♦ Readable Bar Code Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Readable Symbology Setting	SS	Automatic discrimination ◆	00
	CS	Code 128, UCC/EAN-128	01
	CS	UPC-A	02
	CS	UPC-E	03
	CS	EAN/JAN-13	04
	CS	EAN/JAN-8	05
	CS	Codabar/NW-7	06
	CS	Code 39/Code 32, HIBC	07
	CS	Code 25 Family, IATA	08
Remember to scan **"FIN"** to terminate this selection. But if you select the **" Automatic discrimination "**, FuzzyScan will terminate this selection **automatically**.	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

▪ If your application is reading known, limited bar code symbologies, you may increase the reading speed and decrease the reading error possibility by selecting those known symbologies only. Furthermore, to add the "**Symbology ID**" into the transmitted data is also helpful for applications to identify the specific symbology ID.

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Symbology Reading Control

♦ **Code 39/Code 32 Setting** ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 39 Family Setting	SS	Select Standard Code 39 as primary format ◆	0
	SS	Select Full ASCII Code 39 as primary format	1
	SS	Select Code 32 (Italian Pharmaceutical) as primary format	2
	SS	Disable start/stop symbol transmission ◆	3
	SS	Enable start/stop symbol transmission	4
	SS	Disable Code 32 leading A transmission ◆	5
	SS	Enable Code 32 leading A transmission	6
	SS	Disable MOD 43 check digit verification ◆	7
	SS	Enable MOD 43 check digit verification	8
	SS	Disable check digit transmission	9
	SS	Enable check digit transmission ◆	A
Code 39 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 39 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)**

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Symbology Reading Control

♦ Codabar/NW-7 Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Codabar Setting	SS	Select Codabar standard format ◆	0
	SS	Select Codabar ABC format	1
	SS	Select Codabar CLSI format	2
	SS	Select Codabar CX format	3
	SS	Disable start/stop symbol transmission ◆	4
	SS	Enable ABCD/ABCD start/stop symbol transmission	5
	SS	Enable abcd/abcd start/stop symbol transmission	6
	SS	Enable ABCD/TN*E start/stop symbol transmission	7
	SS	Enable abcd/tn*e start/stop symbol transmission	8
	SS	Disable check digit verification ◆	9
	SS	Enable check digit verification	A
	SS	Disable check digit transmission	B
	SS	Enable check digit transmission ◆	C
Codabar 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)**
Codabar 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)**

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Symbology Reading Control

♦ UPC-A & UPC-E Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UPC Family Setting	SS	Disable UPC-E expansion ◆	0
	SS	Enable UPC-E expansion	1
	SS	Disable UPC standardization ◆	2
	SS	Enable UPC standardization	3
	SS	Disable UPC numeric system	4
	SS	Enable UPC numeric system ◆	5
	SS	Disable UPC-A check digit transmission	6
	SS	Enable UPC-A check digit transmission ◆	7
	SS	Disable UPC-E check digit transmission	8
	SS	Enable UPC-E check digit transmission ◆	9
	SS	Disable UPC "leading 1" portion ◆	A
	SS	Enable UPC "leading 1" portion	B
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 7-digit UPC-E and 8-digit ENA-8 to 12-digit UPC-A and 13-digit EAN-13.
- **UPC-A/E Standardization**   : Expand the 7-digit UPC-E and 12-digit UPC-A to 8-digit UPC-8 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/JAN/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	7	- 1	- 1	+ 2	+ 5	+ 1	+ 5
EAN/JAN-13	13	- 1	NC	+ 2	+ 5	NC	0
EAN/JAN-8	8	- 1	NC	+ 2	+ 5	NC	+ 5

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Symbology Reading Control

♦ EAN/JAN & IATA Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
EAN/JAN Setting	SS	Disable EAN-8 expansion ◆	0
	SS	Enable EAN-8 expansion	1
	SS	Disable EAN-13 check digit transmission	2
	SS	Enable EAN-13 check digit transmission ◆	3
	SS	Disable EAN-8 check digit transmission	4
	SS	Enable EAN-8 check digit transmission ◆	5
	SS	Disable ISBN/ISSN Conversion reading check ◆	6
	SS	Enable ISBN/ISSN Conversion reading check	7
EAN/JAN 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/JAN Addenda Separator Off ◆	6
	SS	EAN/JAN Addenda Separator On	7
IATA Setting	SS	Select 15-digit fixed length IATA checking ◆	0
	SS	Select variable length IATA	1
	SS	Disable check digit verification ◆	2
	SS	Enable check digit automatic verification	3
	SS	Enable S/N checking digit verification only	4
	SS	Enable CPN checking digit verification only	5
	SS	Enable CPN, Airline and S/N check digit verification	6
	SS	Disable start/stop symbol transmission ◆	7
	SS	Enable start/stop symbol transmission	8
	SS	Disable check digit transmission	9
	SS	Enable check digit transmission ◆	A

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PROGRAM

Symbology Reading Control

♦ **Code 25 Family & German Post Code Setting** ♦

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 25 Setting	SS	Select any Code 25 ◆	0
	SS	Select Standard/Industrial 2 of 5 only	1
	SS	Select Matrix 2 of 5 only	2
	SS	Select Interleaved 2 of 5 only	3
	SS	Select Interleaved 2 of 5 S Code only	4
	SS	Select IATA only	5
	SS	Select China Postal Code only	6
	SS	Disable check digit verification ◆	7
	SS	Enable check digit verification	8
	SS	Disable check digit transmission	9
	SS	Enable check digit transmission ◆	A
Code 25 Min. Length	SS	Default (06) ◆	**FIN**
	MS	01-Maximum	**(2 digits)**
		Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
Code 25 Max. Length	SS	Default (98) ◆	**FIN**
	MS	98-Minimum	**(2 digits)**
		Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
German Postal Setting	SS	Disable ◆	0
	SS	Enable	1

▪ The FuzzyScan can decode almost all Code 25 symbologies automatically. But we recommend that you select **only one** kind of Code 25 for reading, or set limited **maximum and minimum reading length** for reading, because the encoding algorithm of Code 25 isn't very good. To decode all Code 25 automatically or to read variable length Code 25 will increase the error reading rate.

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Symbology Reading Control

♦ Code 11 & Code 93 Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 11 Setting	SS SS SS SS SS	Select 1-check digit verification Select 2-check digit verification ◆ Disable check digit transmission ◆ Enable 1-check digit transmission Enable 2-check digit transmission	0 1 2 3 4
Code 11 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 11 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)**
Code 93 Setting	SS SS	Disable check digit transmission ◆ Enable check digit transmission	0 1
Code 93 Min. Length	SS **MS**	Default (03) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**
Code 93 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)**

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Symbology Reading Control

♦ MSI/Plessey, Code 128 & UCC/EAN 128 Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
MSI/Plessey Setting	SS SS SS SS SS SS	Select MOD 10 check digit ◆ Select MOD 10-10 check digit Select MOD 11-10 check digit Disable check digit transmission Enable 1-check digit transmission ◆ Enable 2-check digit transmission	0 1 2 3 4 5
MSI/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)**
MSI/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)**
Code 128/EAN-128 Setting	SS SS SS SS	Disable function code conversion ◆ Enable function code conversion ISBT Concatenation On ISBT Concatenation Off ◆	0 1 2 3
Code 128/EAN-128 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 128/EAN-128 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)**

FuzzyScan Programming Manual

Symbology Reading Control
♦ UK/Plessey & Telepen Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UK/Plessey Setting	SS SS SS SS SS SS	Select UK/Plessey Standard Format ◆ Select UK/Plessey CLSI Format Disable Convert X to A-F ◆ Enable Convert X to A-F Disable check digit transmission ◆ Enable check digit transmission	0 1 2 3 4 5
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)**
Telepen Setting	SS SS SS SS	Select Telepen Numeric mode ◆ Select Telepen Full ASCII mode Disable check digit transmission ◆ Enable check digit transmission	0 1 2 3
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)**

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PROGRAM

Symbology Reading Control

♦ GS1 DataBar Setting ♦

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
GS1 DataBar Setting	SS SS SS SS SS SS	Disable GS1 DataBar (RSS-14) decoder Enable GS1 DataBar (RSS-14) decoder ◆ Disable GS1 DataBar limited decoder Enable GS1 DataBar limited decoder ◆ Disable GS1 DataBar expanded decoder Enable GS1 DataBar expanded decoder ◆	0 1 2 3 4 5
GS1 DataBar Min. Length	SS **MS**	Default (04) ◆ 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.	**FIN** **(2 digits)**
GS1 DataBar Max. Length	SS **MS**	Default (74) ◆ 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.	**FIN** **(2 digits)**

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Keyboard Interface Control

♦ Keyboard Layout (Language) Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Keyboard Laybout	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 premble 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

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Keyboard Interface Control

♦ Record Suffix, Preamble, Postamble & Caps Lock ♦

PROGRAM

M_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.

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Keyboard Interface Control

♦ **Delay Setting** ♦

PROGRAM

M_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.

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Keyboard Interface Control

♦ Emulation Setting & Upper/Lower Case Setting ♦

PROGRAM

M_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

FuzzyScan Programming Manual

Serial Interface Control

♦ Record Suffix, Preamble ,Postamble Setting ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
STX/ETX Control	SS SS	Disable STX/ETX transmission ◆ Enable STX/ETX transmission	0 1
		STX/ETX are two characters used to indicate the starting and ending of the total data frame transmitted via serial interface.	
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	**FIN [00-7f], [FIN]**
		Maximum 15-character input; scan "FIN" to terminate this selection.	
Postamble	SS **MS**	None ◆ 1-15 characters	**FIN [00-7f], [FIN]**
		Maximum 15-character input; scan "FIN" to terminate this selection.	

▪ **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

Serial Interface Control

♦ Delay Setting ♦

PROGRAM

M_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.

Serial Interface Control

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

PROGRAM M_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	38.4K BPS 19.2K BPS 9600 BPS ◆ 4800 BPS	2400 BPS 1200 BPS 600 BPS 300 BPS	0 1 2 3	4 5 6 7
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
Time Out Control	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 **Time Out Control** is a pre-defined delay time for FuzzyScan to wait for handshaking, acknowledgment or non-acknowledgment from the host computer.

FuzzyScan Programming Manual

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Wand Emulation Control

♦ **Output Polarity, Signal State, Margin/Module Time, etc.** ♦

PROGRAM

M_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) Determine the output voltage level for both bar and space.		0 1	
Initial Signal State	SS SS	High Level (5Vdc) ◆ Low Level (0Vdc) Determine the initial state of output voltage level.		0 1	
Margin Time	SS SS SS SS	10 msec. 15 msec. 20 msec. ◆ 25 msec.	30 msec. 50 mssec. 100 mseconds 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 Emulation	SS SS SS	Disable standard Code 39 emulation ◆ Enable standard Code 39 skip emulation Enable standard Code 39 replace emulation		0 1 2	

▪ **[Code 39 Skip]** : When this option is selected, all scanned data will be translated as Standard Code 39 wand 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.**

FuzzyScan Programming Manual

PROGRAM

Operation Control

♦ **Operation Mode Setting** ♦

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Operation Mode	SS	Low Power mode (Low Power triggering)	0
	SS	Trigger mode/Serial mode (External triggering) ◆	1
	SS	Presentation mode (Auto detection)	2
	SS	Alternative mode (Periodic power off)	3
	SS	Flash mode (Pulse driven reading)	4
	SS	Force mode (Continued power on)	5
	SS	Toggle mode (Repeat reading)	6
	SS	Diagnostic mode (Test reading)	7

▪ **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 savings.

▪ **Trigger Mode/Serial 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 bar codes. The LEDs are off for ambient conditions until a change occurs in the imager's field of view. Then the LEDS turn on automatically to read the bar code. If the light level in the room is not high enough, Presentation Mode may not work properly.

▪ **Alternative Mode (Periodic Power Off)**

The scanner keeps the light source of the scanner turned on and disables the infrared sensor till the pre-defined auto power off duration 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 auto power off timer counter 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 without the pre-defined auto power off duration 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.

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Operation Control

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

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Buzzer Tone Adjust	SS	Buzzer tone – mute	0
	SS	Buzzer tone – low	1
	SS	Buzzer tone – medium ◆	2
	SS	Buzzer tone – high	3
	SS	Buzzer tone - extremely high	4
	SS	Power-on beep ◆	5
	SS	No power-on beep	6
Power On Indicator	SS	Disable (Power on, LED off)	0
	SS	Enable (Power on, LED on as normal) ◆	1
Vibrator	SS	Disable	0
	SS	Vibrator duration – short	1
	SS	Vibrator duration – medium ◆	2
	SS	Vibrator duration – long	3
	SS	Vibrator duration – extremely long	4
		Optional function	
Inverse Reading	SS	Disable ◆	0
	SS	Enable	1
Dollar Sign Control	SS	Dollar sign output as " $ " ◆	0
	SS	Dollar sign output as "¥"	1
	SS	Dollar sign output as " € "	2
	SS	Dollar sign output as " £ "	3
	SS	Dollar sign output as " ¢ "	4

FuzzyScan Programming Manual

Operation Control

♦ Flash Duty Cycle, Redundancy, Delay Setting ♦

PROGRAM

M_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 1 time ◆ 2 times 3 times 4 times 5 times To prevent potential miss reading.	0 1 2 3 4 5
Reread Delay	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 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** 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.

FuzzyScan Programming Manual

Operation Control

♦ Time-out Setting, Good Read Beep Duration ♦

PROGRAM

M_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Auto Power Off Duration	SS SS SS SS	Short ◆ Medium Long Extremely long	0 1 2 3
Hands Free Time-out	SS SS SS SS	Short ◆ Medium Long Extremely long	0 1 2 3
Good Read Beep Duration	SS SS SS SS	Short Medium ◆ Long Extremely long	0 1 2 3

▪ The **Auto Power Off Duration** is a pre-defined power off time out counter for Alternative Mode, Presentation Mode and Flash Mode. The scanner keeps the light source of the scanner turned on and disable the infrared sensor till the pre-defined auto power off duration is up. You can adjust this parameter to meet your own application requirement.

▪ The Presentation Modes, Force Mode and Flash Mode are referred to as "hands free" modes. If the imager's trigger is pulled when using a hands free mode, the imager changes to manual trigger mode. You can set the time for imager to remain in manual trigger mode by setting the **Hands Free Time-Out**. Once the time-out value is up (if there have been no further trigger pulls), the imager reverts to the original hands free mode.

▪ The **Good Read Beep Duration** is a pre-defined duration of the beep which the imager emits on a good read (only available for Trigger Mode).

FuzzyScan Programming Manual

Condensed DataWizard

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

PROGRAM

M_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	Disable symbology ID transmission ◆ Enable prefix symbology ID transmission Enable suffix symbology ID transmission Enable both prefix and suffix symbology ID transmission	0 1 2 3

- **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.

FuzzyScan Programming Manual

Condensed DataWizard

♦ Data Formatter Setting ♦

PROGRAM

M_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 Symbolology 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 37 for details.
- Please note that all "**Character**" input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.

Condensed DataWizard

♦ Data Verifier Setting ♦

PROGRAM

M_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 Indetified Character	SS **DS**	Disable ◆ Enable 2-digits checking position; 1 identified character	FIN (2 digits) position	**[00-7F]**
2nd Indetified Character	SS **DS**	Disable ◆ Enable 2-digits checking position; 1 identified character	FIN (2 digits) position	**[00-7F]**
3rd Indetified 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 37 for details.

- Please note that all "**Character**" input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.

FuzzyScan Programming Manual

Condensed DataWizard

♦ Data Replacer Setting ♦

PROGRAM

M_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 Replcement** 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 37 for details.

▪ Please note that all "**Character**" input should be referred to the **ASCII/HEX Table** listed in Appendix to find mathced HEX value.

FuzzyScan Programming Manual

Condensed DataWizard

♦ Data Organizer Setting ♦

PROGRAM

M_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 37 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 37 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**	Code 39 : **07**	Code 93 : **09**
UCC/EAN 128 : **31**	Code 32 : **37**	Code 11 : **10**
UPC-A : **02**	Standard/Industrial 2 of 5 : **08**	MSI/Plessey : **11**
UPC-E : **03**	Matrix 2 of 5 : **38**	UK/Plessey : **12**
EAN/JAN-13 : **04**	Interleaved 2 of 5 : **48**	Telepen : **13**
EAN/JAN-8 : **05**	China Postal Code : **58**	GS1 Data Bar : **14**
Codabar/NW-7 : **06**	German Postal Code : **68**	
	IATA : **78**	

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 "9".

- 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.

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)

: High Byte of HEX Value   : Low Byte of HEX Value

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

FuzzyScan
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