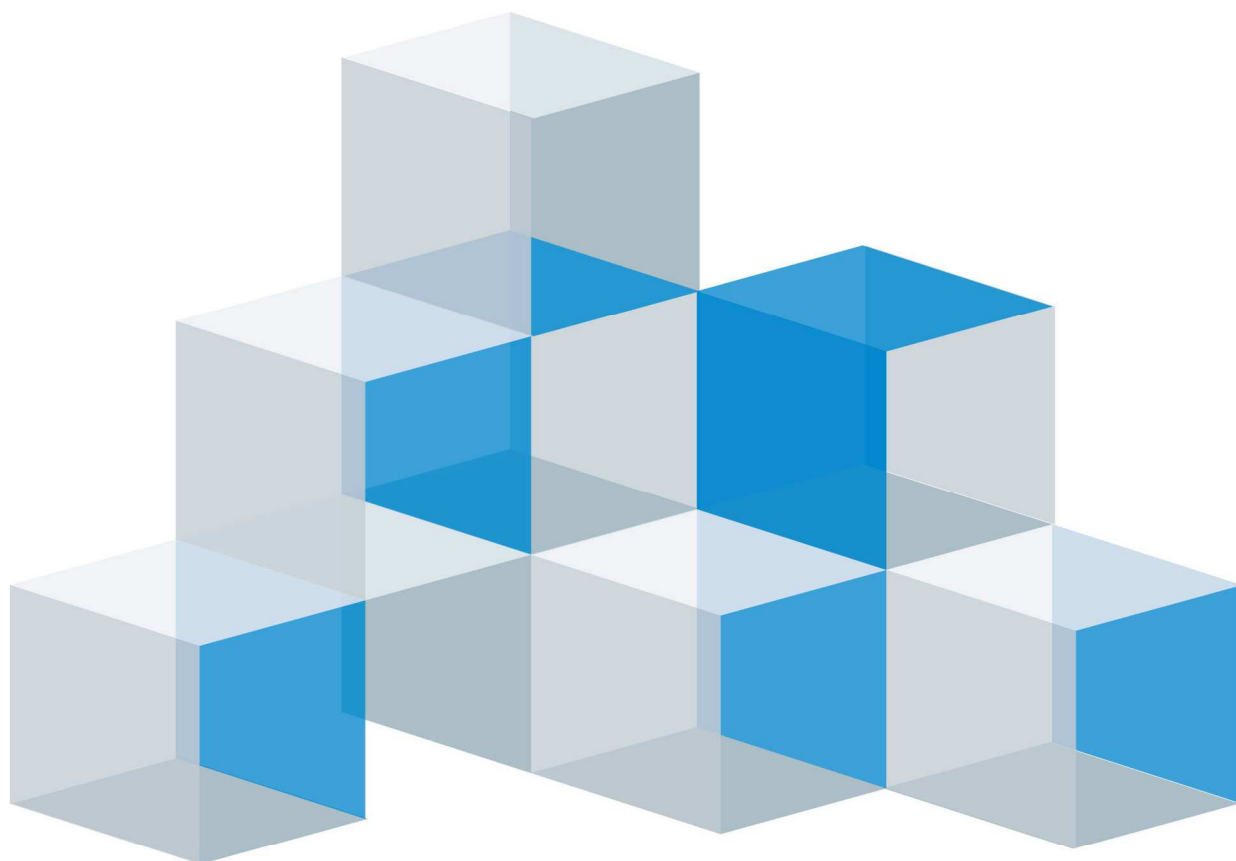# FUZZYSCAN
FIXED MOUNT SCANNER

Programming Manual
International Edition, Rev. D4

cino

Revision History

Rev. No.	Released Date	Description
Rev. A0	May 26, 2010	❖ First Release
Rev. A1	Jun. 18,2010	❖ Add "**Symbology Reading Control**" - "UPC/EAN Security Level".
Rev. A2	Sep. 16,2010	❖ Add "**Symbology Reading Control**" - "Supplement Scan Voting" and "EAN Supplement Control" ❖ Modify "**Keyboard Interface Control**"–"Keyboard Layout (Language) Setting" ❖ Remove "**Operation Control**" -" Power On Indicator" and add "Good Read Indicator". ❖ Add "**Operation Control**" - "Scan Rate Control " and "Good Read Indicator" ❖ Add "**Operation Control**" - "NG Message Output"
Rev. A3	Nov 11, 2010	❖ Modify "**Serial Interface Control**"–" Baud Rate"
Rev. A4	Mar 04, 2011	❖ Modify "**Serial Interface Control**"–"Baud Rate".
Rev. A5	Mar 22, 2011	❖ Modify "**Symbology Reading Control**" - "Code 39 Setting" ❖ Modify "**Serial Interface Control**"–"Protocol, ACK/NAK Setting"
Rev. A6	Jul 22, 2011	❖ Rename "**Symbology Reading Control**" - " UCC/EAN-128" to "GS1-128" ❖ Rename "**Serial Interface Control**"–" ACK/NAK Transmission Indication" to "ACK Indication" ❖ Modify "**Serial Interface Control**"–"ACK Indication" and "Serial response time -out".
Rev. A7	Nov 04, 2011	❖ Modify "**Symbology Reading Control**" - " Codabar/ NW-7 Setting "
Rev.A8	Mar 09, 2012	❖ Add "**Operation Control**" - "1D Barcode Forward-reading Indication", "1D Barcode Backward-reading Indication", "1D Barcode Direction Indication Transmission" and "Lateral Reading".

Revision History

Rev. No.	Released Date	Description
Rev.A9	Jul 25, 2012	❖ Add "**Host Interface Selection**"–" USB HID Legacy" ❖ Modify "**Symbology Reading Control**" - "Code 128 Setting"
Rev. B1	Aug 20, 2013	❖ Modify "**Symbology Reading Control**" - "Readable Bar Code Setting" ❖ Modify "Appendix" - "**Symbology ID Table**"
Rev. C1	Mar.3 2014	❖ Support 2D Functions
Rev. C2	Jun 23, 2014	❖ Modify "**Operation Control**" -"Illumination Control". ❖ Modify **Operation Control**" -"Reread Delay"
Rev. C3	Feb. 6, 2015	❖ Modify "**Symbology Reading Control**" - "MaxiCode Setting"
Rev. C4	Dec. 23, 2015	❖ Update "Revision History"
Rev. C5	Aug. 4, 2016	❖ Add "**Symbology Reading Control**" - "Small DM Code Reading"
Rev. C6	Oct. 4, 2016	❖ Add "**Operation Control**" - "Buzzer Volume".
Rev. C7	Oct. 11, 2016	❖ Modify "**Operation Control**" - "Buzzer Tone Adjust" ❖ Modify "**Operation Control**"-"Lateral Reading"
Rev. C8	Mar. 9, 2017	❖ Modify "**Operation Control**" - "Buzzer Tone Adjust" ❖ Remove "**Operation Control**"- "Dollar Sign" to **"Keyboard Interface Control"**- "Dollar Sign Control"

Revision History

Rev. No.	Released Date	Description
Rev. C9	Sep.20, 2018	❖ Modified "**Symbology Reading Control**" – "Readable Bar Code Setting"–"Popular 1D" ❖ Added "**Operation Control**" - "Motion Control" ❖ Modified the description of "**Symbology Reading Control**"–"UPC/EAN Security Level" ❖ Added information on **Code Pages**
Rev. C10	Nov. 22, 2018	❖ Improved "Symbology Reading Control" – "Code 128 Setting ISBT" - ISBT Concatenation settings
Rev. C11	Mar. 6, 2019	❖ Modified "Symbology Reading Control" – "QR Code Setting" – "Auto detect QR Code Inverse Reading" ❖ Modified "**Operation Control**" – "Motion Control". Redefined "Motion Control" as "Scene Mode".
Rev. D1	Aug. 2, 2019	❖ Added information about new product models: FA480 and FA460. ❖ Modified "**Operation Control**" – "Scene Mode". Renamed "Scene Mode" as "Smart Scene".

Rev. D2	Apr. 8, 2020	❖ Added "**Installing Your Scanner**"–"Diagnostic Mode"
		❖ Added "**Keyboard Layout Setting**" - "Universal"
		❖ Added "**Serial Interface Control**"–"Serial Port Output"
		❖ "**Keyboard Interface Control**" – "Function Key Emulation":
		  ❖ Renamed option "Enable ASCII 00-31 code as keyboard function code output" to "Enable Keyboard Function Code Table 1 Output"
		  ❖ Renamed option "Ctrl-Output" to "Enable Keyboard Function Code Table 2 Output"
		  ❖ Added option "Enable Keyboard Function Code Table 3 Output"
		❖ Modified "**Appendix**" – "Keyboard Function Control Table":
		  ❖ Renamed column title "Key Function" to "Key Function 1"
		  ❖ Renamed column title "Ctrl-Output" to "Key Function 2"
		  ❖ Added column "Key Function 3"

Revision History

Rev. No.	Released Date	Description
Rev. D3	Jun, 2, 2020	❖ Modified "**Symbology Reading Control**" – "Small DM Code Reading" to "Damaged DM Code Reading"
Rev. D4	Aug, 14, 2020	❖ "**Symbology Reading Control**" – "QR Code Setting" ❖ Added function option "QR Code Mirror Images"

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.

FuzzyScan Fixed Mount Scan Programming Manual

Regulatory

FC	FCC part 15B
CE	EN55022, EN55024, EN61000-3-2, EN61000-3-3,
	CNS13438
	Clause 3, Article 58-2 of Radio Waves Act.
VCCI	VCCI, TECHNICAL REQUIREMENTS, Class B ITE
LED Eye Safety	IEC62471 Exempt group

Table of Contents

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FuzzyScan Fixed Mount Scan
Programming Manual

GETTING STARTED

Getting Familiar with Your Scanner

Thank you for choosing Cino FuzzyScan Fixed Mount Scanner. Built with FuzzyScan Imaging Technology, durable ultra-compact design and rich functionality, it provides an ideal barcode scanning solution for both industrial and general purpose applications. This document provides a quick reference for installation and operation. The complete documentation is available at **www.cino.com.tw**.

FM480 Series (Front-view Model)
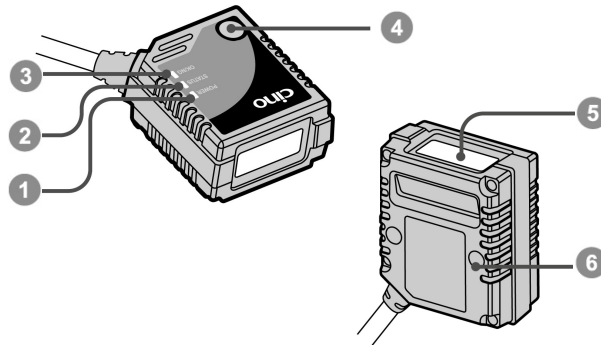
FA480/FA470/FA460 Series (Front-view Model)
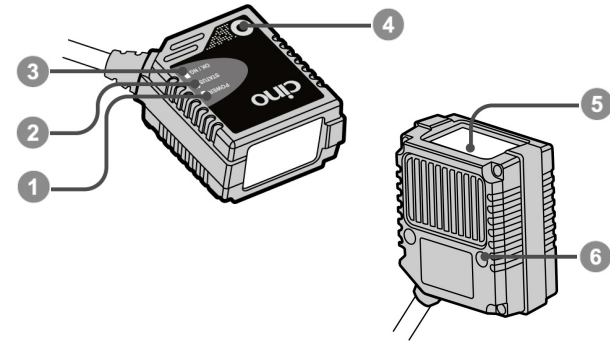
1	Power Indicator
2	Status Indicator
3	OK/NG Indicator
4	Intelli Button™
5	Scan Window
6	M3 Mounting Hole

FM480 Series (Side-view Model)
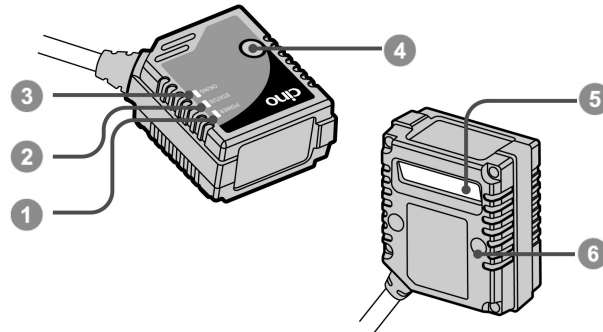
FA480/FA470/FA460 Series (Side-view Model)
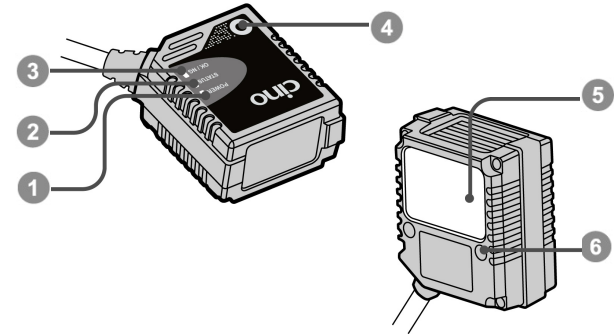
1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button™
5. Scan Window
6. M3 Mounting Hole

Connecting to Your Host

Both RS232 and USB interfaces are available in different models. Each model is equipped with corresponding connector to meet various application demands.

USB Models (FM480-11x/FA4x0-xx-11x)

The USB models provide a plug-and-play solution. Both USB HID and USB COM Port Emulation interfaces are available for user's choice.
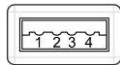
4-pin Type A Connector

Pin No.	Signal	Description	I/O Type
Case	FG	Frame Ground	---
1	VCC	---	I
2	Data -	USB Data -	I/O
3	Data +	USB Data +	I/O
4	GND	---	---

RS232 Models (FM480-00x/FA4x0-xx-00x)

The RS232 models support the standard RS232 interface equipped a 9-pin D-sub connector with power jack for external 5Vdc power inlet.
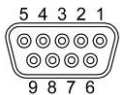
9-pin D-sub Female Connector

Pin No.	Signal	Description	I/O Type
Case	FG	Frame Ground	---
1	---	---	---
2	TXD	Transmit Data	I
3	RXD	Receive Data	O
4	---	---	---
5	GND	Signal Ground	---
6	---	---	---
7	CTS	Clear to Send	I
8	RTS	Request to Send	O
9	VCC	5Vdc Power Supply	I

Universal Models (FM480-98x/FA4x0-xx-98x)

The universal models support RS232 and USB interfaces with OK/NG signal outputs and external trigger input.
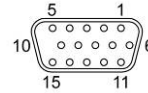
15-pin D-sub HD Female Connector

Pin No.	Signal	Description	I/O Type
1	VCC	5Vdc Power Supply	I
2	TXD	Transmit Data	O
3	RXD	Receive Data	I
4	GND	Signal Ground	---
5	---	---	---
6	RTS	Request to Send	O
7	OK	OK Signal Output (3-24Vdc)	O
8	Data +	USB Data +	I/O
9	Trigger	External Trigger Input	I
10	CTS	Clear to Send	I
11	---	---	---
12	Data -	USB Data -	I/O
13	Shield	Frame Ground	---
14	NG	NG Signal Output (3-24Vdc)	O
15	Reserved	---	---

3

Installing Your Scanner

Adjust Reading Angle

The readability may be impacted by the specular reflection caused by the perpendicular reading angle. To get the most optimal reading performance, you are suggested to install the scanner at an approximate **15°** angle to the perpendicular line of the target barcode. However, the reading angle and distance may vary depending on the size and printing quality of barcodes.

Front-view   **Side-view**

Mount Your Scanner

FM480   FA480/FA470/FA460
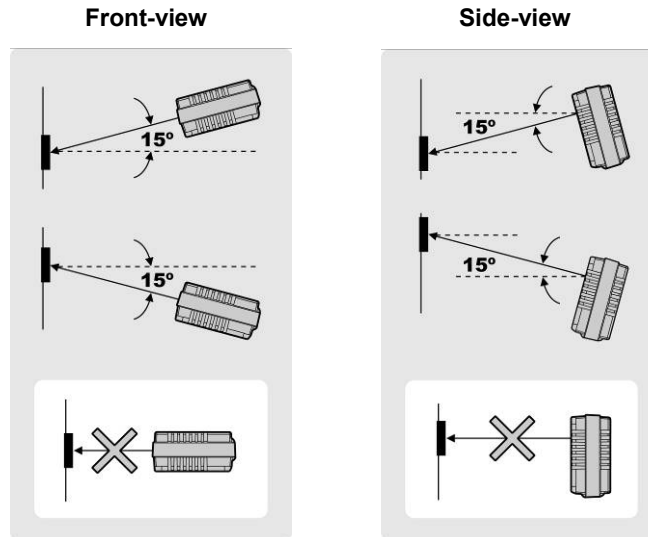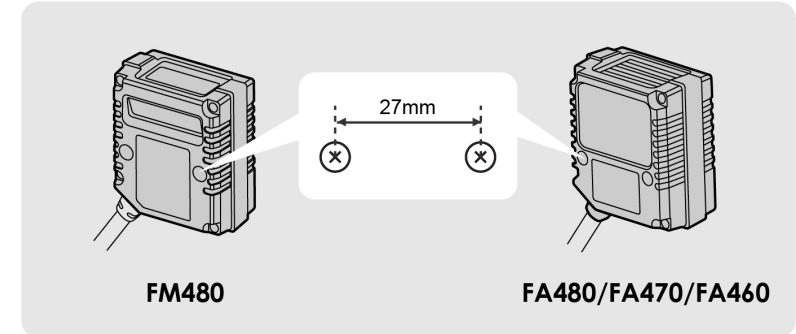
There are two **M3** mounting holes on the bottom of the chassis. Please follow below procedures to mount your scanner.

1. Prepare two appropriate M3 screws(minimal 4mm in depth) and decide your desired mounting location. Then adjust the two screws to accommodate **27mm** center width.

2. Optimize the mounting position by adjusting the reading angle and distance. Ensure the illumination envelop is not blocked by any external object. Use **Diagnostic Mode** to help on finding the optimal mounting position.

3. Use the **Intelli Button™** to trigger the **Test Mode** to verify the actual reading rate. If the reading rate is not good enough, please adjust the reading angle and distance to get the optimum readability.

Diagnostic Mode

Diagnostic Mode is designed to help on finding the optimal mounting position by visual and audio feedback. Under Diagnostic Mode, the light source of the scanner will be constantly on, regardless of other settings, such as reread delay or redundancy. The suitability of a mounting position can be evaluated via test scans under this mode and by listening to the frequency of reading beeps. The higher the frequency is, the better the position is.

Diagnostic Mode

To end the Diagnostic Mode, switch to any of the operation mode by scanning quick set command (see section **Getting Started - Operation Mode**) or sending serial command.

Intelli Button™

For normal operation, the Intelli Button™ of the scanner acts as a manual **Trigger Switch**. You can press the Intelli Button™ to scan the corresponding barcode commands to configure your scanner with ease. Moreover, the useful Intelli Button™ can help you to identify the best mounting position. Please refer to following descriptions for more details.

Optimize Your Installation

Once the mounting position for the scanner is determined, you may use the Intelli Button™ to optimize the mounting position with ease. Please follow below procedures to use the Intelli Button™.

❶ Press and hold the Intelli Button™ for more than **5** seconds until the status indicator gives one green blink, then release the button. The scanner will emit 2 short beeps and the power indicator will flash blue blink per 1 second to indicate the force reading process is activated. The scanner will turn on the light source to scan barcodes continuously until the whole process completed.

❷ Keep the scanner to read the same barcode. The scanner will count the **Good Read** numbers, then output the information of reading rate and refresh LED indications every 100 scans. The format of output message is listed below.

<center><　Readout data　>　　　　　　　　　　　：　　　　　　　　　<Reading rate (0 to 100)></center>

Meanwhile, both Status and OK/NG indicators provide the visible reading rate information as well. You may refer to the table listed below for details.

Reading rate	STATUS Indicator	OK/NG Indicator
100%	Steady Green	Steady Green
80 to 99%	Steady Red	Steady Green
50 to 79%	Steady Green	Steady Red
20 to 49%	Steady Orange	Steady Orange
0 to 19%	Steady Red	Steady Red

❸ If the reading rate is not good enough, please adjust the reading angle and distance to get the optimum readability. If you would like to exit the force reading process, please press the Intelli Button™ once again.

1. If the scanner is unable to read any barcode during preset scan input time-out (default is 900ms), the scanner will count it as a NG reading

2. During force reading process, the OK/NG output signals will not be Performed.

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Using Your Scanner

Both FuzzyScan **Barcode commands** and **Serial commands** are available to configure your scanner. The FuzzyScan barcode commands are a series of proprietary barcodes which allow you to easily configure the scanner for most applications. Moreover, the FuzzyScan serial commands are ideal for precise and complicated reading control in machine-controllable environments. Please refer to the relevant documentations for details.

External Trigger and Serial Trigger

The scanner provides both external trigger and serial trigger to activate the scanning processes. Please note that the external trigger is only available for universal models. The serial trigger is workable for all models including RS232 serial and USB COM Port Emulation interfaces.

User Defined Serial Trigger Command

For user's convenience to replace the other existing fixed mount scanner, the useful user defined serial trigger command allows you to trigger the scanner without impacting the existing application programs.

Scan Input Time-out

The scan input time-out is an adjustable value for the time period that light source turns on. It's available for presentation, alternative and level modes. The scanner keeps the light source on and continues to scan until the defined scan input time-out is up. You can adjust the time-out duration from 100 milliseconds to 99 seconds to meet various demands.

OK and NG Outputs

The universal models support additional OK and NG outputs for more precise reading control. If the scanner got a good read, a signal will be outputted through the OK pin. However, if the scanner failed to read the barcode during a reading cycle or preset scan input time-out, a signal will be outputted through the NG pin.

The OK and NG outputs are designed as **NPN** signal outputs and preset to active low. You may change the active state of OK and NG outputs to meet your applications

Operation Modes

The FuzzyScan Fixed Mount Scanner provides five different operation modes, including trigger, alternative, level, presentation and force modes to meet various application demands

Both the presentation and force modes support **triggerless** operation. You don't need to use either external trigger or serial trigger to activate the scanning. But the trigger, alternative and level modes **have to** work with **external trigger** or **serial trigger** to scan barcode.

Operation Mode Ⓐ FA480/FA470/FA460

The details of supported operation modes are listed below.

Ⓐ

Trigger Mode

Under trigger mode, the scanner will turn on the light source to read barcode when it receives an external trigger or a serial trigger ON command. Once the external trigger has been released, or the scanner gets a good read or a serial trigger OFF command, the scanner will stop reading and wait for the next trigger to activate scanning again.

Ⓐ

Alternative Mode

When the scanner receives an external trigger or a serial trigger ON command under alternative mode, the scanner will turn on the light source to read barcodes until the **preset scan input time-out** is up. The scan input time-out will be reset after each good read. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

Ⓐ

Level Mode

When the scanner receives an external trigger or a serial trigger ON command under level mode, the scanner will turn on the light source to read barcodes until **a good read** is performed or the **preset scan input time-out** is up. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

Ⓐ

Presentation Mode

When presentation mode is selected, the scanner is preset to turn on the background lighting to detect the bar codes. Once the scanner detects an image similar to a bar code in the scanner field of view, it will turn on the light source to scan until the **preset scan input time-out** is up. You may adjust the setting of "Presentation Sensitivity" to increase detection sensitivity.

Ⓐ

Force Mode

Under Force Mode, the scanner continues to read barcodes without using external trigger or serial trigger. Please note that the scanner will not stop reading until you switch to another operation mode.

Operation Mode ▣ FM480

The details of supported operation modes are listed below.

Trigger Mode

Under trigger mode, the scanner will turn on the light source to read barcode when it receives an external trigger or a serial trigger ON command. Once the external trigger has been released, or the scanner gets a good read or a serial trigger OFF command, the scanner will stop reading and wait for the next trigger to activate scanning again.

Alternative Mode

When the scanner receives an external trigger or a serial trigger ON command under alternative mode, the scanner will turn on the light source to read barcodes until the **presets can input time-out** is up. The scan input time-out will be reset after each good read. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

Level Mode

When the scanner receives an external trigger or a serial trigger ON command under level mode, the scanner will turn on the light source to read barcodes until **a good read** is performed or the **preset scan input time-out** is up. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

Presentation Mode

Under presentation mode, the scanner will automatically detect the object movement in the scanner field of view. Once the scanner detects an image similar to a barcode, it will turn on the light source to scan until the **preset scan input time-out** is up. For dark environments, you may adjust the setting of "Presentation Sensitivity" to increase the detection sensitivity.

Force Mode

Under force mode, the scanner continues to read barcodes without using external trigger or serial trigger. Please note that the scanner will not stop reading until you switch to another operation mode.

CONFIGURING YOUR SCANNER

Barcode 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

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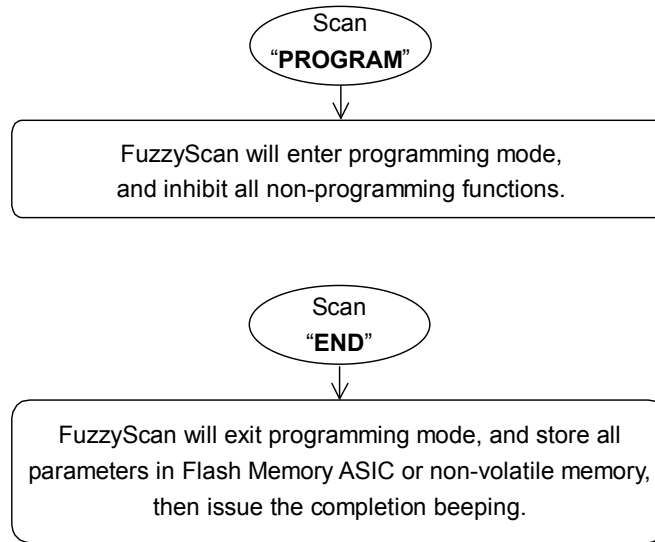
✍ Please note that the FuzzyScan will take 3-4 seconds to store parameters in internal Flash Memory ASIC or non-volatile memory after you scan the "**END**". Please **don't** turn off the power before the completion beeping. It may destroy all configured parameters.

System List, Group & Master Default
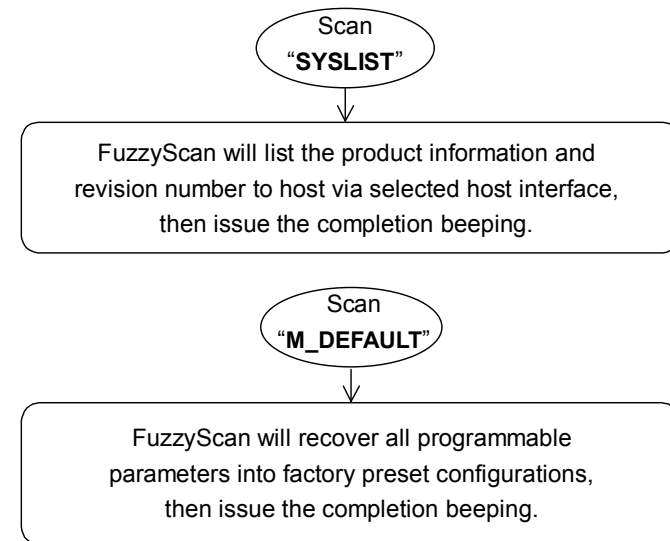
Scan
"**SYSLIST**"

↓

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.

Single scan selection

Scan "**PROGRAM**"

Enter programming mode.

Scan One of **Family** Codes
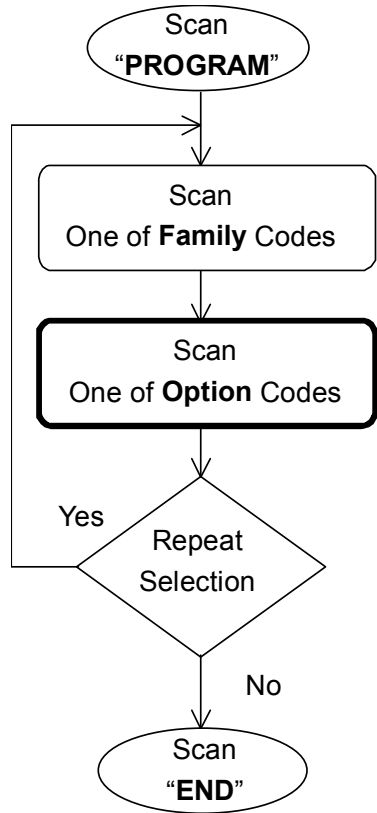
Select one of desired programming families.

Scan One of **Option** Codes

Select one option code of desired parameter.

Repeat Selection

Yes

No

Want to select another programming family?

Scan "**END**"

Exit programming mode.

Multiple scans selection
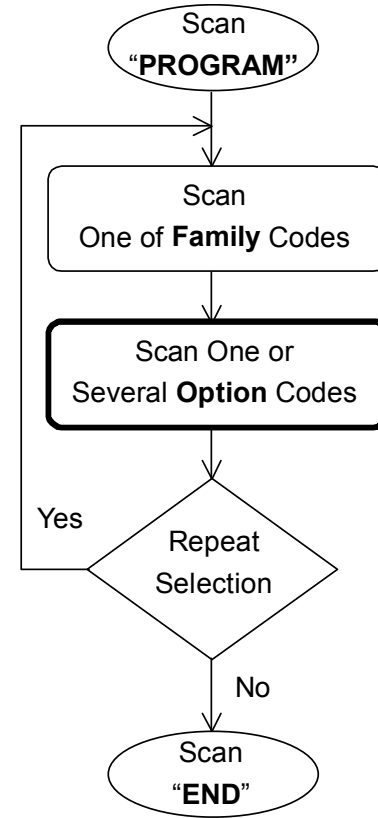
Scan "**PROGRAM**"

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.

Repeat Selection

Yes

No

Want to select another programming family?

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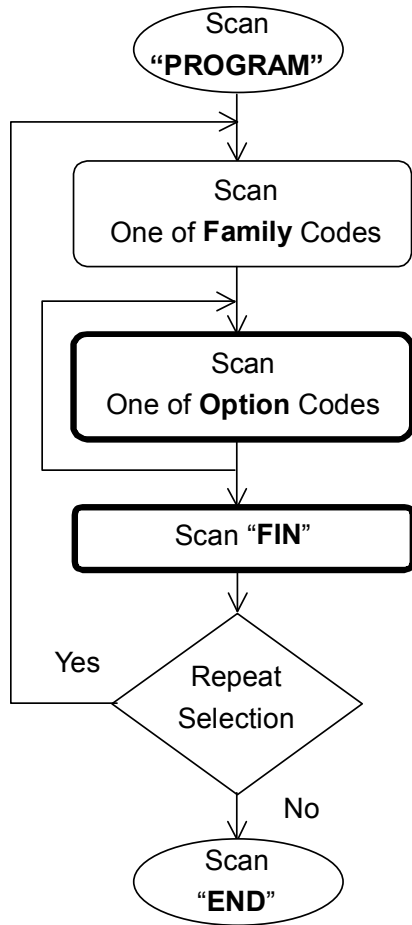
Scan One of **Option** Codes — **Cycling select one or several option codes of desired parameters as "Single" or "Multiple" scans selection.**

Scan **"FIN"** — **Finish cycling selection.** (If necessary)

Repeat Selection
- Yes
- No — Want to select another 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.
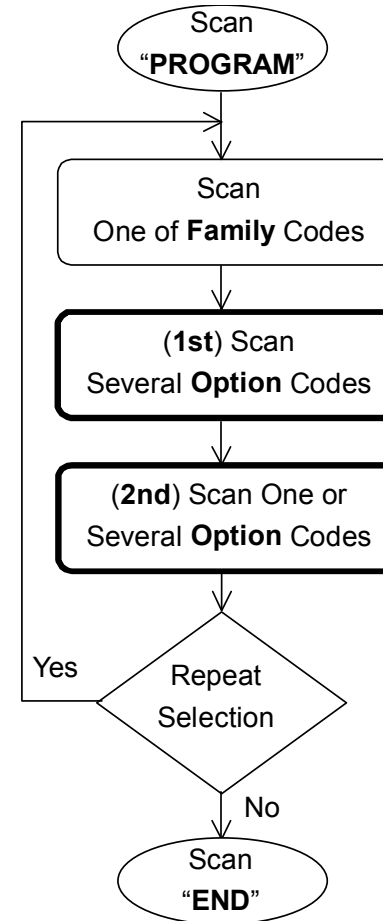
(**1st**) Scan Several **Option** Codes — **Select several option codes of desired parameters.**

(**2nd**) Scan One or Several **Option** Codes

1. Select one or several option codes of desired parameters.

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

Repeat Selection
- Yes
- No — Want to select another programming family?

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

15

PROGRAM

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Host Interface Selection	**MS** **MS** **MS** **MS** **MS**	Standard/TTL RS232 peer-to-peer serial USB Com Port Emulation USB HID standard mode USB HID turbo mode USB HID Legacy	06 09 18 19 20

Symbology Reading Control

User Defined Symbol ID

Family Code Selection	P.C	Parameter Selection	Option Code	2ndOption Code
Symbol ID : 1 character	**DS**	Code 128 (default=**B**)	00	**(1 character)**
		GS1-128 (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)**
		Code 16K (default=**Q**)	24	**(1 character)**
		Code 49 (default=**U**)	25	**(1 character)**
		Korea Post Code (default=**a**)	26	**(1 character)**
		QR & Micro QR Code (default=**b**)	28	**(1 character)**
		Data Matrix (default=**c**)	29	**(1 character)**
		Maxi Code (default=**d**)	30	**(1 character)**

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Symbol ID : 1 character	**DS**	Aztec Code (default=**e**)	31	(1 character)
		Chinese Sensible (default=**f**)	32	(1 character)
		Australian Post (default=**g**)	33	(1 character)
		British Post (default=**h**)	34	(1 character)
		Intelligent Mail (USPS 4CB/One Code) (default=**j**)	36	(1 character)
		Japan Post (default=**k**)	37	(1 character)
		Netherlands KIX Post (default=**l**)	38	(1 character)
		US Planet (default=**m**)	39	(1 character)
		US Postnet (default=**o**)	41	(1 character)

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

Family Code Selection	P.C	Parameter Selection	Option Code
Readable Symbology Setting	SS	Auto ◆	00
	CS	Popular 1D	C0
	CS	Code 128 *	01
	CS	GS1-128 *	31
	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	Germany 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	Code 16K	19
	CS	Code 49	20
	CS	Korea Post Code	21
	CS	QR Code */ Micro QR Code *	A0
	CS	Data Matrix *	A1
	CS	MaxiCode	A2
	CS	Aztec Code *	A3
	CS	Chinese Sensible (Han Xin) Code	A4

Remember to scan **"FIN"** to terminate this selection. But if you select the **"Auto"**, FuzzyScan will terminate this selection **automatically**.

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Family Code Selection	P.C	Parameter Selection	Option Code
Readable Symbology Setting	CS	Australian Post	B0
	CS	British Post	B1
	CS	Intelligent Mail barcode	B3
	CS	Japanese Post	B4
	CS	KIX Post	B5
	CS	Planet Code	B6
	CS	Postnet	B8

- 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 enabled as default. When you select "Auto", the scanner only reads 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 start/stop characters.
- "**Popular 1D**" includes "Code 128", "GSA-128", "UPC-A", "UPC-E", "EAN-13", "EAN-8", "Codabar/NW-7","Code 39", "Interleaved 2 of 5", "Code 93", "GS1 DataBar (RSS-14)".

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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**
	MS	01-Maximum	**(2 digits)**
		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**
	MS	98-Minimum	**(2 digits)**
		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.

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PROGRAM

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 39 Security Level	SS SS SS SS	Level 0 Level 1 Level 2◆ Level 3	0 1 2 3

▪ **Code 39 Security Level**

   The scanner offers four levels of decode security for Code39 bar codes:

   Level 0: If you are experiencing misread of poorly-printed or serious out-of-spec. bar codes in level 1, please select level 0.

   Level 1: If you are experiencing misread of poorly-printed or out-of-spec. bar codes in level 2, please select level 1.

Level 2:   This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding "in-spec" Code39 bar codes.

   Level 3: If you failed to read poorly-printed or out-of-spec. bar codes in level 2, please select level 3. This is the most aggressive setting and may increase the misread.

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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 Check Digit Settings	SS	Modulus 16◆	0
	SS	Modulus 10/weight 3	1
	SS	Modulus 11	2
	SS	Modulus 10/weight 2	3
	SS	7 check DR	4
	SS	Weight Modulus 11	5
	SS	Runes (Modulus 10/weight 2)	6
Codabar Min. Length	SS	Default (04) ◆	**FIN**
	MS	01-Maximum	**(2 digits)**
		Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	

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Family Code Selection	P.C	Parameter Selection	Option Code
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)**

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.

▪ **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

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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/EAN Security Level	SS	Level 0		0	
	SS	Level 1 ◆		1	
	SS	Level 2		2	
		Only available for UPC-A & EAN-13			
Supplement Scan Voting	SS	None	Level 7	0	7
	SS	Level 1	Level 8	1	8
	SS	Level 2	Level 9	2	9
	SS	Level 3◆	Level 10	3	A
	SS	Level 4	Level 11	4	B
	SS	Level 5	Level 12	5	C
	SS	Level 6	Level 13	6	D

▪ **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 failed to read poorly-printed or out-of-spec. bar codes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.

▪ The **Supplement Scan Voting** is the number of times the same UPC/EAN with 2/5 supplement digits has to be decoded before it is transmitted. It is helpful when decoding a mix of UPC/EAN symbols with and without supplement digits. This function is effective when you select UPC/EAN with only 2 supplement digits, UPC/EAN with only 5 supplement digits or UPC/EAN with 2/5 supplement digits. The default value is Level 3. When you select higher level, it may impact the reading speed on poorly-printed, low contrast or damage barcode labels.

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PROGRAM

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	
Supplement Scan Voting	SS	None	Level 7	0	7
	SS	Level 1	Level 8	1	8
	SS	Level 2	Level 9	2	9
	SS	Level 3◆	Level 10	3	A
	SS	Level 4	Level 11	4	B
	SS	Level 5	Level 12	5	C
	SS	Level 6	Level 13	6	D

The **Supplement Scan Voting** is the number of times the same UPC/EAN with 2/5 supplement digits has to be decoded before it is transmitted. It is helpful when decoding a mix of UPC/EAN symbols with and without supplement digits. This function is effective when you select UPC/EAN with only 2 supplement digits, UPC/EAN with only 5 supplement digits or UPC/EAN with 2/5 supplement digits. The default value is Level 3. When you select higher level, it may impact the reading speed on poorly-printed, low contrast or damage barcode labels.

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Symbology Reading Control

UPC/EAN Security Level Setting, EAN Supplement Control

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
EAN Supplement Control	SS SS SS SS SS SS SS SS	Disable all specific prefix supplement digital output◆ Enable all specific prefix supplement digital output Enable 491 Supplement Digit Output Enable 978/979 Supplement Digit Output Enable 977 Supplement Digit Output Enable 378/379 Supplement Digit Output Enable 414/419 Supplement Digit Output Enable 434/439 Supplement Digit Output	0 1 2 3 4 5 6 7

▪ **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 failed to read poorly-printed or out-of-spec. bar codes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.

▪ **EAN Supplement Control**

If you select EAN with only 2, or 5 or 2/5 supplement digits and enable 491 prefix supplement digit output, the scanner will transmit EAN with 2, or 5 or 2/5 supplement digits bar codes starting with 491 prefix. The EAN without supplement digit **will not** be transmitted.

If you select EAN with only 2, or 5 or 2/5 supplement digits and enable the other except 491 prefix supplement digit output, the scanner will transmit EAN with 2, or 5, or 2/5 supplement digits bar codes starting with specific prefix. The EAN without supplement digit **will** be transmitted.

Symbology Reading Control
UCC Coupon Extended Code Setting

Family Code Selection	P.C	Parameter Selection	Option Code
UCC Coupon Extended Code	SS SS	Disable UCC Coupon Extended Code ◆ Enable UCC Coupon Extended Code	0 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 GS1-128 Coupon Codes. UPC-A, EAN-13and EAN-128 must be enabled to scan all types of Coupon Codes.

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

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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	EnableMatrix 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.

Family Code Selection	P.C	Parameter Selection	Option Code
Code 11 Setting	SS SS SS SS SS SS SS	Disable Code 11 ◆ Enable Code 11 Disable check digit verification ◆ Select 1-check digit verification Select 2-check digit verification Disable check digit transmission ◆ Enable check digit transmission	0 1 2 3 4 5 6
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 SS SS	Disable Code 93 Enable Code 93◆ Disable check digit transmission ◆ Enable check digit transmission	0 1 2 3
Code 93 Min. Length	SS **MS**	Default (01) ◆ 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)**

Family Code Selection	P.C	Parameter Selection	Option Code
MSI/Plessey Setting	SS SS SS SS SS SS SS	Disable MSI/Plessy ◆ Enable MSI/Plessy Select MOD 10 check digit ◆ Select MOD 10-10 check digit Select MOD 11-10 check digit Disable check digit transmission◆ Enable check digit transmission	0 1 2 3 4 5 6
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, and then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**

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Family Code Selection	P.C	Parameter Selection	Option Code
Code 128 Setting	SS	Disable Code 128	0
	SS	Enable Code 128 ◆	1
	SS	ISBT Concatenation Off◆	2
	SS	ISBT Concatenation On	3
		ISBT Concatenation On – Check ISBT table	4
		ISBT Concatenation Auto	5
Code 128 Min. Length	SS MS	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN (2 digits)**
Code 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)**
Code 128 Security Level	SS	Level 0	0
	SS	Level 1 ◆	1

▪ **Code 128 Setting**

ISBT Concatenation Off: The scanner will not output ISBT concatenated barcodes.

ISBT Concatenation On: The scanner will only decode and output ISBT concatenated barcodes. The scanner will not decode or output single ISBT barcodes.

ISBT Concatenation On – Check ISBT table: The scanner will only output ISBT concatenated barcodes that conform to ICCBBA standards. The scanner will not output single ISBT barcodes or ISBT concatenated barcodes that do not conform to ICCBBA standards.

ISBT Concatenation Auto: The Scanner will decode and output both ISBT concatenated barcodes and single ISBT barcodes.

▪ **Code 128 Security Level**

The scanner offers two levels of decode security for Code128 bar codes:

Level 0:   If you are experiencing misread of poor-printed or out-of-spec. barcode inlevel1,please select level 0.

Level 1:   This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding "in-spec." Code128barcodes.

Family Code Selection	P.C	Parameter Selection	Option Code
GS1-128 Setting	SS SS	Disable GS1-128 Enable GS1-128◆	0 1
GS1-128 Min. Length	SS **MS**	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**
GS1-128 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)**

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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)**

Symbology Reading Control

Telepen Setting

Family Code Selection	P.C	Parameter Selection	Option Code
Telepen Setting	SS	Disable Telepen ◆	0
	SS	Enable Telepen	1
	SS	Select Telepen Numeric mode ◆	2
	SS	Select Telepen Full ASCII mode	3
	SS	Disable check digit transmission ◆	4
	SS	Enable check digit transmission	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, and then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**

Family Code Selection	P.C	Parameter Selection	Option Code
GS1 DataBar Setting	SS SS SS SS SS SS	Disable GS1 DataBar (RSS-14) Enable GS1 DataBar (RSS-14)◆ Disable GS1 DataBar Limited Enable GS1 DataBar Limited◆ DisableGS1 DataBar Expanded EnableGS1 DataBar Expanded◆	0 1 2 3 4 5
GS1 DataBar Min. Length	SS **MS**	Default (04) ◆ 01-Maximum Only available for GS1 Databar **Expanded.** 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 GS1 Databar **Expanded**. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**

PROGRAM

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
		If UPC Composite Mode: UPC never linked is selected, UPC barcodes are transmitted whether MicroPDF417 symbol is detected or not. If UPC Composite Mode: UPC always linked is selected, UPC barcodes are only transmitted when the MicroPDF417 is detected.	
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

Family Code Selection	P.C	Parameter Selection	Option Code
Code 16K Setting	SS SS	Disable Code 16K ◆ Enable Code 16K	0 1
Code 16K Min. Length	SS **MS**	Default (01) ◆ 01-Maximum Scan 3 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(3 digits)**
Code 16K Max. Length	SS **MS**	Default (160) ◆ 160-Minimum Scan 3 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(3 digits)**
Code 49 Setting	SS SS	Disable Code 49 ◆ Enable Code 49	0 1
Code 49 Min. Length	SS **MS**	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**
Code 49 Max. Length	SS **MS**	Default (81) ◆ 81-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

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
QR Code Setting	SS	Disable QR Code	0
	SS	Enable QR Code ◆	1
		Disable MicroQR Code	2
		Enable MicroQR Code ◆	3
		Disable QR Code Append	4
		Enable QR Code Append ◆	5
		Disable QR Code Inverse Reading	6
		Enable QR Code Inverse Reading	7
		Auto detect QR Code Inverse Reading◆	8
		Disable QR Code Mirror Images	9
		Enable QR Code Mirror Images	A
		Auto detect QR Code Mirror Images ◆	B
QR Code Min. Length	SS	Default (01) ◆	**FIN**
	MS	01-Maximum	**(4 digits)**
		Scan 4 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	
QR Code Max. Length	SS	Default (7089) ◆	**FIN**
	MS	7089-Minimum	
		Scan 4 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**(4 digits)**

▪ **QR Code Inverse Reading:** When **Enabled**, the scanner only read inversed (white on black) QR codes. If **Auto detect** is selected the scanner can read both normal and inversed QR codes. However, Auto detect might increase decoding time under certain circumstances.

▪ **QR Code Mirror Images:** When **Enabled**, the scanner only read mirrored QR and Micro QR codes. If **Auto detect** is selected the scanner can read both normal and mirrored QR/Micro QR codes. However, Auto detect might increase decoding time under certain circumstances.

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Family Code Selection	P.C	Parameter Selection	Option Code
Data Matrix Setting	SS SS SS SS SS SS SS SS	Disable Data Matrix Enable Data Matrix ◆ Disable Data Matrix Inverse Reading Enable Data Matrix Inverse Reading Auto Detect Data Matrix Inverse Reading◆ Disable Data Matrix Mirror Images Enable Data Matrix Mirror Images Auto Detect Data Matrix Mirror Images ◆	0 1 4 5 6 7 8 9
Data Matrix Min. Length	SS **MS**	Default (01) ◆ 01-Maximum Scan 4 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(4 digits)**
Data Matrix Max. Length	SS **MS**	Default (3116) ◆ 3116-Minimum Scan 4 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(4 digits)**
Damaged DM Code Reading	SS SS SS	Standard◆ Level 1 Level 2	0 1 2

- **Data Matrix Inverse Reading:** When **Enabled**, the scanner only read inversed (white on black) Data Matrix. If **Auto detect** is selected the scanner can read both normal and inversed Data Matrix. However, Auto detect might increase decoding time under certain circumstances.
- **Data Matrix Mirror Images:** When **Enabled**, the scanner only read mirrored Data Matrix. If **Auto detect** is selected the scanner can read both normal and mirrored Data Matrix. However, Auto detect might increase decoding time under certain circumstances.
- **Damaged DM Code Reading:** When using 2D scanner to read small or damaged DataMatrix, you can enable this function to improve the scanner's reading ability. Be aware that the scanner's snappiness decreases when the function is enabled.

Family Code Selection	P.C	Parameter Selection	Option Code
MaxiCode Setting	SS SS	Disable MaxiCode ◆ Enable MaxiCode	0 1
MaxiCode Min. Length	SS **MS**	Default (01) ◆ 01-Maximum Scan 3 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(3 digits)**
MaxiCode Max. Length	SS **MS**	Default (150) ◆ 150-Minimum Scan 3 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(3 digits)**

Family Code Selection	P.C	Parameter Selection	Option Code
Aztec Code Setting	SS SS	Disable Aztec Code Enable Aztec Code ◆	0 1
Aztec Code Min. Length	SS **MS**	Default (01) ◆ 01-Maximum Scan 4 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(4 digits)**
Aztec Code Max. Length	SS **MS**	Default (3832) ◆ 3832-Minimum Scan 4 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(4 digits)**

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Family Code Selection	P.C	Parameter Selection	Option Code
Australian Post Setting	SS	Disable Australian Post ◆	0
	SS	Enable Australian Post	1
	SS	Raw format Output◆	2
	SS	Numeric Encoding Output (N Encoding Table)	3
	SS	Alphanumeric Encoding Output (C Encoding Table)	4
	SS	Auto-discriminate Output (Combination C & N Encoding Table)	5
US Planet Setting	SS	Disable US Planet ◆	0
	SS	Enable US Planet	1
	SS	Disable Check Digit Transmission ◆	2
	SS	Enable Check Digit Transmission	3
US Postnet Setting	SS	Disable US Postnet ◆	0
	SS	Enable US Postnet	1
	SS	Disable Check Digit Transmission ◆	2
	SS	Enable Check Digit Transmission	3
British Post Setting	SS	Disable British Post ◆	0
	SS	Enable British Post	1
	SS	Disable Check Digit Transmission ◆	2
	SS	Enable Check Digit Transmission	3
Japan Post Setting	SS	Disable Japan Post ◆	0
	SS	Enable Japan Post	1

▪**Australian Post Setting:** Auto-discriminate output option increase the risk of misread because the encoded data format does not specify the Encoding Table used for encoding.

Family Code Selection	P.C	Parameter Selection	Option Code
Netherlands KIX Code Setting	SS SS	Disable Netherlands KIX Code ◆ Enable Netherlands KIX Code	0 1
Intelligent Mail Setting **(USPS 4CB/One Code)**	SS SS	Disable Intelligent Mail ◆ Enable Intelligent Mail	0 1
Korea Post Code Setting	SS SS	Disable◆ Enable Length fixed in 6 characters.	0 1

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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 (Spanish, QWERTY)	05
	SS	Sweden/Finland (QWERTY)	06
	SS	Portugal (QWERTY)	07
	SS	Norway (QWERTY)	08
	SS	Spain (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	Czech (QWERTY)	17
	SS	Universal	99

▪ 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	2-4 digits	1 or 3 characters	Variable length	1 or 3 characters	1-15 characters	1 character

Keyboard Interface Control

Record Suffix, Preamble, Postamble, FNC1 Symbol Character Transmit

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]**
FNC1 Symbol Char. Transmit	SS SS	Disable Enable ◆	0 1

▪ **FNC1 Symbol Char. Transmit:** When this function is enabled and the FNC1 is contained in scanned data, the scanner transmits the FNC1 to the host. Chart of theFNC1 is provided in Appendix- Keyboard Function Code Table. When the scanner interface is set to keyboard, the scan code is converted to corresponding key function before it is transmitted.

PROGRAM

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
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**" is **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

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 transmissions of each segment of the message string.

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Keyboard Interface Control

Function Key & Key Pad Emulation, Upper/Lower Case Setting, Dollar Sign Control

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Function Key Emulation	SS SS SS	Enable Keyboard Function Code Table 1 Output◆ Enable Keyboard Function Code Table 2 Output (Ctrl-Output) Enable Keyboard Function Code Table 3 Output Refer to Appendix – "Keyboard Function Code Table" for details.	0 1 2
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
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

▪ The function of "**Key Pad Emulation**" is **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.

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Family Code Selection	P.C	Parameter Selection	Option Code
Barcode Encoding Format	MS	UTF8	00
		Codepage 950	10
		Codepage 949	11
		Codepage 936	12
		Codepage 932	13
		Codepage 874	14
		WIN1250	15
		WIN1251	16
		WIN1252◆	17
		WIN1253	18
		WIN1254	19
		WIN1255	1a
		WIN1256	1b
		WIN1257	1c
		WIN1258	1d
		ISO 8859-1 Latin 1, Western European	1e
		ISO 8859-2 Latin 2, Central European	1f
		ISO 8859-3 Latin 3, Southern European	20
		ISO 8859-4 Latin 4, Northern European	21
		ISO 8859-5 Cyrillic	22
		ISO 8859-6 Arabic	23
		ISO 8859-7 Greek	24
		ISO 8859-8 Hebrew	25
		ISO 8859-9 Latin 5, Turkish	26
		ISO 8859-10 Latin 6, Nordic	27

		ISO 8859-11 Thai	28
		ISO 8859-13 Latin 7, Baltic	29
		ISO 8859-14 Latin 8, Celtic	2a
		ISO 8859-15 Latin 9	2b
		ISO 8859-16 Latin 10, South-Eastern European	2c
Keyboard Output	MS	MAC Unicode Output	01
		WIN Notepad Unicode Output	02
		WIN Wordpad Unicode Output	03
		Codepage 950 Output	10
		Codepage 949 Output	11
		Codepage 936 Output	12
		Codepage 932 Output	13
		Codepage 874 Output	14
		WIN1250 Output	15
		WIN1251 Output	16
		WIN1252 Output◆	17
		WIN1253 Output	18
		WIN1254 Output	19
		Codepage 852 Output	30
		Codepage 855 Output	31
		Codepage 866 Output	32
		Codepage 850 Output	33
		Codepage 437 Output	34
		Codepage 737 Output	35
		Codepage 857 Output	36
		Codepage 862 Output	37
		Codepage 720 Output	38
		Codepage 775 Output	39
		WIN1255 Output	1a
		WIN1256 Output	1b
		WIN1257 Output	1c
		WIN1258 Output	1d

- **Corresponding Languages:** Please see Appendix below, "Code Page - Table of Corresponding Languages".
- **Barcode Encoding Format:** 2D barcodes can be encoded using different code pages. To properly decode the data of a 2D barcode, the scanner must first be set to the corresponding code page of such data. Select UTF8 if the 2D barcode was encoded in Unicode (UTF-8).
- **Keyboard Output:** Different languages use different code pages. For your scanner to properly display the content of a2D barcode, select the code page that corresponds to the content's language. Please check your system locale setting in Windows and make sure that it also matches this language.
  1) Mac Device Output: If your host is a Mac device, select "MAC Unicode Output" as the scanner's output setting (the data will be in Unicode). You must also first ensure that your Mac device has the required Unicode Hex Input Setup and is configured for the 16-bit input method. Please see Appendix below, "Code Page - Unicode Hex Input Setup".
  2) WIN Notepad Unicode Output: If your host is a Windows device, you can output the data in Unicode format to Notepad. You must first ensure that your Windows device has the required Unicode Hex Input Setup, and is set to the US English input method. Please see Appendix below, "Code Page - Unicode Hex Input Setup".
  3) WIN WordPad Unicode Output: If your host is a Windows device, you can output the data in Unicode format to WordPad. You must first ensure that your Windows device is set to the US English input method.

PROGRAM

Serial Interface Control

STX/ETX Control, Record Suffix, Preamble, Postamble, FNC1 Symbol Char. Transmit

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]
FNC1 Symbol Char. Transmit	SS SS	Disable Enable ◆ When this function is enabled and the FNC1 is contained in scanned data, the scanner transmits the FNC1 to the host. Chart of the FNC1 is provided in Appendix–Keyboard Function Code Table. When the scanner interface is set to keyboard, the scan code is converted to corresponding key function before it is transmitted	0 1

▪ **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	2-4 digits	1 or 3 characters	Variable length	1 or 3 characters	1-15 characters	1 character	1 character

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, ACK/NAK Setting

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
NAK Retry Count	SS SS	3 times◆ 0~255 times	**FIN** **(3 digits)**
ACK Indication	SS SS SS SS	Disable ACK Time-out Indication Enable ACK Time-out Indication ◆ Disable ACK Indication ◆ Enable ACK Indication	0 1 2 3

▪ USB COM doesn't support RTS/CTS handshaking protocol. 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.

▪ 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.

▪ **NAK Retry Count**

After transmitting data, the scanner expects a NAK response from the host up to the preset "Serial Response Time-out". If the scanner doesn't get a response, the scanner will issue an error indication and discard the data. When a NAK is received, the scanner transmits the same data again and waits for either an ACK or NAK. The scanner issues an error indication and discards the data under following two conditions:
1) After preset NAK retry counts is received within the preset serial response time-out.
2) If the preset time-out is up but the preset NAK retry counts haven't come to the end.

The default retry counts are three times. If you program "0 time", the scanner won't resend the data to the host when the scanner receives a NAK. The scanner will discard the data. If you program "255 times", the scanner can receive unlimited NAKs from the host within the pre-set serial response time-out.

This function is not available for batch mode. When you enable this function in on-line mode, the out-of-range function will be disable automatically.

▪ **ACK Indication:**
Disable: There's neither LED nor beeping indication for this setting.
Enable: There's a specific LED and beeping indication for this setting.

Family Code Selection	P.C	Parameter Selection		Option Code	
Serial Response Time-out	SS	None	3 seconds	0	6
	SS	200 msec.	4 seconds	1	7
	SS	500 msec. ◆	5 seconds	2	8
	SS	800 msec.	8 seconds	3	9
	SS	1 second	10 seconds	4	A
	SS	2 seconds	15 seconds	5	B
Baud Rate (BPS)	SS	38.4K BPS	2400 BPS	0	4
	SS	19.2K BPS	1200 BPS	1	5
	SS	9600 BPS ◆	57.6K BPS	2	8
	SS	4800 BPS	115.2K BPS	3	9
Data Frame	SS	8, None, 1 ◆	7, Space, 1	0	8
	SS	8, Odd, 1	7, Mark, 1	1	9
	SS	8, Even, 1	7, None, 2	2	A
	SS	8, Space, 1	7, Odd, 2	3	B
	SS	8, Mark, 1	7, Even, 2	4	C
	SS	8, None, 2	7, Space, 2	5	D
	SS	7, Odd, 1	7, Mark, 2	6	E
	SS	7, Even, 1		7	

- 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.

Code Page: Barcode Encoding Format, Serial Port Output

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Family Code Selection	P.C	Parameter Selection		Option Code	
Barcode Encoding Format	MS	UTF8	ISO 8859-5 Cyrillic	00	22
		Code page 950	ISO 8859-6 Arabic	10	23
		Code page 949	ISO 8859-7 Greek	11	24
		Code page 936	ISO 8859-8 Hebrew	12	25
		Code page 932	ISO 8859-9 Latin 5, Turkish	13	26
		Code page 874	ISO 8859-10 Latin 6, Nordic	14	27
		WIN1250	ISO 8859-11 Thai	15	28
		WIN1251	ISO 8859-13 Latin 7, Baltic	16	29
		WIN1252 ◆	ISO 8859-14 Latin 8, Celtic	17	2a
		WIN1253	ISO 8859-15 Latin 9	18	2b
		WIN1254	ISO 8859-16 Latin 10, South-Eastern European	19	2c
		WIN1255		1a	
		WIN1256		1b	
		WIN1257		1c	
		WIN1258		1d	
		ISO 8859-1 Latin 1, Western European		1e	
		ISO 8859-2 Latin 2, Central European		1f	
		ISO 8859-3 Latin 3, Southern European		20	
		ISO 8859-4 Latin 4, Northern European		21	
Serial Port Output	MS	Raw Data ◆		00	
		Unicode (Big Endian)		01	
		Unicode (Little Endian)		02	
		UTF8		03	
		CP950 Output (Big Endian)		10	
		CP949 Output (Big Endian)		11	
		CP936 Output (Big Endian)		12	

		CP932 Output (Big Endian)	13
		CP874 Output	14
		WIN1250 Output	15
		WIN1251 Output	16
		WIN1252 Output	17
		WIN1253 Output	18
		WIN1254 Output	19
		WIN1255 Output	1A
		WIN1256 Output	1B
		WIN1257 Output	1C
		WIN1258 Output	1D
		CP852	30
		CP855	31
		CP866	32
		CP850	33
		CP437	34
		CP737	35
		CP857	36
		CP862	37
		CP720	38
		CP775	39
		CP950 Output (Little Endian)	90
		CP949 Output (Little Endian)	91
		CP936 Output (Little Endian)	92
		CP932 Output (Little Endian)	93

▪ To get multilingual output with the serial interface, please choose correct barcode encoding format and its corresponding serial port output format.

Operation Control

FM480

Operation Mode

Family Code Selection	P.C	Parameter Selection	Option Code
Operation Mode	SS	Trigger mode ◆	1
	SS	Presentation mode	2
	SS	Alternative mode	3
	SS	Force mode	5
	SS	Level mode	8

- **Trigger Mode (External Triggering):** When the scanner receives an external trigger or a serial trigger ON command under trigger mode, the scanner will turn on the light source to read barcode until gets a good read, a serial trigger OFF command or a release of external trigger. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

- **Presentation Mode (Auto Detection):** Under presentation mode, the scanner will automatically detect the object movement in the scanner field of view. Once the scanner detected a similar barcode image, the scanner will turn on the light source to read barcodes until the **preset scan input time-out** is up. For dark environments, you may adjust the setting of "Presentation Sensitivity" to increase the detection sensitivity

- **Alternative Mode (Periodic Power Off)**When the scanner receives an external trigger or a serial trigger ON command under alternative mode, the scanner will turn on the light source to read barcodes until the **preset scan input time-out** is up. The scan input time-out will be reset after each good read. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

- **Force Mode (Continued Power On)**Under force mode, the scanner continues to read barcodes without using external trigger or serial trigger. Please note that the scanner will not stop reading until you switch into another operation mode.

- **Level Mode (Auto Power Off)**When the scanner receives an external trigger or a serial trigger ON command under level mode, the scanner will turn on the light source to read barcodes until **a good read** is performed or the **preset scan input time-out** is up. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

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Operation Control
FM480
1D Barcode Reading Direction
& Indication Transmission

Family Code Selection	P.C	Parameter Selection	Option Code
1D Barcode Forward-reading Indication	SS SS **MS**	None ◆ "S" User defined character(1 character)	0 1 **2**〔**00-7F**〕
1D Barcode Backward-reading Indication	SS SS **MS**	None "X" ◆ User defined character(1 character)	0 1 **2**〔**00-7F**〕
1D Barcode Direction Indication Transmission	SS SS SS SS	Disable ◆ Enable prefix direction mark transmission Enable suffix direction mark transmission Enable both prefix and suffix direction mark transmission	0 1 2 3

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Programming Manual

PROGRAM

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Scan Rate Control	SS SS	Dynamic ◆ Fixed	0 1
Lateral Reading	SS SS	Disable ◆ Enable	0 1

- **Scan Rate Control**: The scanner will have better motion tolerance when you select "Fixed" scan rate. It's suitable for application which needs higher motion tolerance on the move. But this may have an impact on the reading distance.
- **Lateral Reading** is **not** a standard function, only available for tailor-made FM480

FuzzyScan Fixed Mount Scan Programming Manual

Operation Control

FA480/FA470/FA460

Operation Mode,
Presentation Background Lighting Control

Family Code Selection	P.C	Parameter Selection	Option Code
Operation Mode	SS	Trigger mode (External triggering) ◆	1
	SS	Presentation mode (Auto detection)	2
	SS	Alternative mode (Periodic power off)	3
	SS	Force mode (Continued power on)	4
	SS	Level mode (Auto power off)	7
	SS	Diagnostic mode (Test reading)	A
Presentation Background Lighting	SS	LEDs Off	0
	SS	LEDs On◆	1

▪ **Trigger Mode (External Triggering):** When the scanner receives an external trigger or a serial trigger ON command under trigger mode, the scanner will turn on the light source to read barcode until gets a good read, a serial trigger OFF command or a release of external trigger. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

▪ **Presentation Mode (Auto Detection):** When presentation mode is selected, the scanner is preset to turn on the background lighting to detect the barcode. Once the scanner detected a similar barcode image, the scanner will turn on the light source to read barcodes until the **preset scan input time-out** is up. For dark environments, you may adjust the setting of "Presentation Sensitivity" to increase the detection sensitivity

▪ **Alternative Mode (Periodic Power Off):** When the scanner receives an external trigger or a serial trigger ON command under alternative mode, the scanner will turn on the light source to read barcodes until the **preset scan input time-out** is up. The scan input time-out will be reset after each good read. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning again.

▪ **Force Mode (Continued Power On):** Under force mode, the scanner continues to read barcodes without using external trigger or serial trigger. Please note that the scanner will not stop reading until you switch into another operation mode.

▪ **Level Mode (Auto Power Off):** When the scanner receives an external trigger or a serial trigger ON command under level mode, the scanner will turn on the light source to read barcodes until **a good read** is performed or the **preset scan input time-out** is up. Once the light source goes off, the scanner is waiting for the next trigger to activate scanning 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.

▪ **Presentation Background Lighting Control:** You can enable or disable presentation background lighting of the scanner according to the ambient light condition in presentation mode. When the ambient light is dim or dark, you can enable this function to turn on the scanner's LED illumination at a dim level. This is helpful for scanner to detect the motion of scene.

FuzzyScan Fixed Mount Scan
Programming Manual

Aiming, Delay Aiming, Decode Aiming, & Illumination Control, Center Alignment

Family Code Selection	P.C	Parameter Selection		Option Code	
Aiming Control	SS	Regular Aiming		0	
	SS	Intelligent Aiming◆		1	
	SS	Delay Aiming Control		2	
Delay Aiming Time-out Control	SS	200 ms	1.5 sec	0	4
	SS	400 ms ◆	2 sec	1	5
	SS	800 ms	3 sec	2	6
	SS	1 sec	4 sec	3	7
Decode Aiming Control	SS	Disable in Hand-Held mode		0	
	SS	Enable in Hand-Held mode◆		1	
	SS	Disable in Hand-Free mode		2	
	SS	Enable in Hand-Free mode ◆		3	
Illumination Control	SS	Disable		0	
	SS	Enable ◆		1	
Center Alignment	SS	Disable in Hand-Held Mode◆		0	
	SS	Enable in Hand-Held Mode		1	
	SS	Disable in Hand-Free Mode ◆		2	
	SS	Enable in Hand-free Mode		3	

- The **Aiming Control** is only available for trigger mode. In Intelligent Aiming, the aiming light is turned on when the scanner is lifted. A trigger pull activates decoding process. After 2 seconds of inactivity, the aiming light will be shut off. Delay Aiming Control allows a delay time for the operator to aim the scanner before the image is taken. During the delay time, the aiming light will be on, but the LED illumination won't be turned on until the delay time is up.

- The **Delay Aiming Time-out Control** is only available for trigger mode. You can use Delay Aiming Time-out Control to set the delay time.

- The **Illumination Control** is only available for trigger mode, alternative mode and level mode.

- **Center Alignment:** When this function is enabled, the scanner only decodes barcode(s)around aiming line.

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FuzzyScan Fixed Mount Scan
Programming Manual

PROGRAM

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Batch Reading	SS	None◆ Batch Reading rule input (01-16 rules)	[FIN] [Rules] [FIN]

▪ **Batch Reading**: When this function is enabled, you can scan multiple barcodes one by one continuously upon one trigger event. The scanner reports a good read beep and indication only if all bar codes set by the "Batch Reading Rule" are read. Otherwise, the scanner reports an error beep and indication. The scanned data will be transmitted according to the preset sequence which is defined in "Batch Reading Rule" regardless the scanned order of those barcodes.

- Batch Reading function is only available **Trigger Mode**.
- Batch Reading is not available when **Multiple Read Mode** or **Center Alignment** is turned on.
-

▪ **Batch Reading Rule**:

- To set the Batch Reading rule
   1.Scan the PROGRAM symbol.
   2.Scan the **Batch Reading** symbol (Family Code).
   3.Use the **Option Code** to define the preset Batch Reading rule.
   4.Scan the **FIN** symbol.
   5.Scan the **END** symbol to save your Batch Reading rule.
   Note: Scan the **ABORT and END** symbol to exit without saving any Batch Reading rule setting.

- When you scan "None", the preset Batch Reading Rule will be cancelled.

- Batch Reading Rule Syntax:
   [n] [Element 1] FF [Element 2] FF [Element 3] FF …[Element n] FF
   Where **n** is the number of elements in the overall rule. The number of elements is up to 16.**FF** indicates the end of one element.

- Element structure:
   [Cino ID Hex value] [Code length] [Character match (es)]
   Where:
   ● **[Cino ID Hex value]**
      Length: 2 byte
      Please find Cino ID hex value from **Symbology ID Table** in appendix. Locate the Hex value for the symbology and scan the 2 digit hex values from the **Option Code**.
      Note: 99 is the universal number, indicating all symbologies.

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● **[Code length]**
   Length: 4 byte
   Specify what length of data output will be acceptable for this symbology. When you calculate the length, you must consider the whole data string which includes the programmed Preamble, Postamble, Scanned Data Length, Prefix/Suffix Symbol ID or AIM ID. Scan the four digit data length from the **Option Code**.
   Note: 40 characters is entered as 0040; 9999 is a universal number, indicating all lengths.

● **[Character match]**
   Length: 2-8 byte
   You can refer to **HEX/ASCII Reference Table** to find the Hex value that represents the character(s) you want to match. Use the **Option Code** to scan the alphanumeric combination that represents the ASCII characters. You can match up to 4 characters which are counted from the start character of the whole **Data String**.
   Note: When setting the matched character(s), you must match the content of the whole Data String, including the programmed Preamble, Postamble, Scanned Data Length, Prefix/Suffix Symbol ID OR AIM ID if you had defined. **FF** is the universal character, indicating all characters.

- **Batch Reading rule example**
   In this example, you are scanning Code 39, Code 128, and Code 93 bar codes, but you would like to output the data in following sequence:
   Code 128 - Code 39 - Code 93

B-CODE39

A-CODE128

C-CODE93

You would set up the Batch Reading rule with the following command line:

[PROGRAM] [Batch Reading] [0301999941FF07999942FF09999943FF] [FIN] [END]

The breakdown of the command line is shown below:

03	The number of elements in the overall rule
01	Code identifier of Code 128
9999	Code length that must match for Code 128, 9999 = all lengths
41	Start character match for Code 128, 41h = "A"
FF	End of first code
07	Code identifier of Code 39
9999	Code length that must match for Code 39, 9999 = all lengths
42	Start character that must match for Code 39, 42h = "B"
FF	End of second code
09	Code identifier of Code 93
9999	Code length that must match for Code 93, 9999 = all lengths
43	Start character match for Code 93, 43h = "C"
FF	End of third code

To program the previous example using specific lengths, you would have to count the programmed Preamble, Postamble, Scanned Data Length, Prefix/Suffix Symbol ID OR AIM ID if you had defined as part of the length. If you enable the Suffix Symbol ID of symbology, you would add one character to the previous example's length.

You would set up the Batch Reading rule with the following command line:

[PROGRAM] [Batch Reading] [0301001041FF070009FF09000943FF] [FIN] [END]

The breakdown of the command line is shown below:

03	The number of elements in the overall rule
01	Code identifier of Code 128
0010	Code length that must match for Code 128
	A-CODE128 sample length (9) plus Suffix Symbol ID (1) = 10
41	Start character match for Code 128, 41h = "A"
FF	End of first code
07	Code identifier of Code 39
0009	Code length that must match for Code 39
	B-CODE39 sample length (8) plus Suffix Symbol ID (1) = 9
FF	Universal matched character, indicating all character
	Also indicate end of second code
09	Code identifier of Code 93
0009	Code length that must match for Code 93
	C-CODE93 sample length (8) plus Suffix Symbol ID (1) = 9
43	Start character match for Code 93, 43h = "C"
FF	End of third code

Note: If the [Character match(es)] is set to "FF", the following "FF" which indicated the end of the code was not need to set.

- Structure of **Data String**

STX (RS232/USB COM interface)	Preamble	Scanned Data Length	Prefix Symbol ID Or Prefix AIM Symbol ID	**Scanned Data modified by DataWizard**	Suffix Symbol ID Or Suffix AIM Symbol ID	Postamble	ETX (RS232/USB COM interface)
1 character	1-15 characters	2-4 digits	1 or 3 characters	Variable length	1 or 3 characters	1-15 characters	1 character

PROGRAM

Operation Control

FM480, FA480/FA470/FA460

Buzzer Tone Adjustment, Power On Indicator,
1D Barcode Inverse Reading

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Buzzer Tone Adjustment	SS SS SS SS SS SS SS	Buzzer tone – mute Buzzer tone – low (Frequency 1.2 kHz) Buzzer tone – medium (Frequency 2.70 kHz)◆ Buzzer tone – high (Frequency 2.81 kHz) Buzzer tone - extremely high (Frequency 2.93 kHz) 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
1D Barcode Inverse Reading	SS SS	Disable ◆ Enable	0 1

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Operation Control

FA480/FA470/FA460

Buzzer Volume

Family Code Selection	P.C	Parameter Selection	Option Code
Buzzer Volume	SS	Low	0
	SS	Medium	1
	SS	High ◆	2

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Family Code Selection	P.C	Parameter Selection	Option Code
Redundancy	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

▪ The **Redundancy** is the number of times the same bar code label has to be decoded before it is transmitted.

Family Code Selection	P.C	Parameter Selection	Option Code
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 SS	None ◆ 200 msec. 500 msec. 1 sec. 1.5 sec. 2 sec. 3 sec.	0 1 2 3 4 5 6

- 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.

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Family Code Selection	P.C	Parameter Selection		Option Code	
Scan Input Time-out	SS	100 msec.	600 msec.	0	5
	SS	200 msec.	700 msec.	1	6
	SS	300 msec.	800 msec.	2	7
	SS	400 msec.	900 msec.◆	3	8
	SS	500 msec.		4	
	MS		User define: 1-99 sec.		9, (2digits)
Hands Free Time-out	SS	Short◆		0	
	SS	Medium		1	
	SS	Long		2	
	SS	Extremely long		3	
	SS	Disable		4	
Good Read Duration	SS	Short		0	
	SS	Medium◆		1	
	SS	Long		2	
	SS	Extremely long		3	
	SS	Extremely short		4	

▪ The **Scan Input Time-out** is a preset light source time out counter for Alternative Mode, Presentation Mode and Level Mode. The scanner keeps the light source on till the preset light source on time is up. You can adjust this parameter to meet your own application requirement.

▪ The presentation mode and force mode will be automatically changed to manual trigger mode when you activate 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 scanner will revert to the original presentation or force mode.

Family Code Selection	P.C	Parameter Selection		Option Code	
Presentation Sensitivity	SS	Level 1	Level 6	0	5
	SS	Level 2	Level 7	1	6
	SS	Level 3		2	
	SS	Level 4		3	
	SS	Level 5 ◆		4	

▪ 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.

Operation Control
FA480/FA470/FA460
Smart Scene

Family Code Selection	P.C	Parameter Selection	Option Code
Smart Scene	SS	Scene 1 ◆	0
	SS	Scene 2	1
	SS	Scene 3	2
	SS	Scene 4	3
	SS	Scene 5	4
	SS	Scene 6	5
	SS	Scene 7	6

▪ **Smart Scene** optimizes the scanner's motion tolerance, scanning speed and scanning sensitivity in different environments.

Scene 1: This is the default setting. It optimizes the scanner's motion tolerance, scanning speed and scanning sensitivity in most working environments.

Scene 2: When scanning high-density barcodes, you can set the scanner to "Scene 2" to optimize scanners' motion tolerance, scanning speed and scanning sensitivity.

Scene 3: Scene 3 is for general retail applications. When scanning common retail barcodes, you can set the scanner to "Scene 3" to optimize scanner's motion tolerance, scanning speed and scanning sensitivity.

Scene 4: Scene 4 is also for general retail applications. It optimizes the scanner's sensitivity and speed when scanning common retail barcodes. Moreover, it provides superior reading performance when scanning barcodes from the screens of mobile devices, especially large screens or screens with low brightness.

Scene 5: Scene 5 is application-specific. It optimizes the scanner's motion tolerance, scanning speed and scanning sensitivity when scanning low PCS (print contrast) barcodes on circuit boards.

Scene 6: Scene 6 is application-specific. It optimizes the scanner's motion tolerance, scanning speed and scanning sensitivity when scanning barcodes on circuit boards under sufficient ambient light.

Scene 7: Scene 7 is application-specific. It optimizes the scanner's motion tolerance, scanning speed and scanning sensitivity when scanning barcodes from the screens of mobile devices.

Family Code Selection	P.C	Parameter Selection		Option Code	
OK/NG Signal Active State	SS SS SS SS	OK low/NG low◆ OK low/NG high OK high/NG low OK high/NG high		0 1 2 3	
OK/NG Signal Output Control	SS SS SS SS	Disable OK and NG output Enable NG output Enable OK output Enable OK and NG output◆		0 1 2 3	
OK/NG Signal Duration	SS SS SS SS SS MS	10 msec. 20 msec. 30 msec. 40 msec. 50 msec.	60 msec. 70 msec. 80 msec. 90 msec. 100 msec.◆ User define: 1-99 (x50) msec.	0 1 2 3 4	5 6 7 8 9 A, (2 digits)
OK/NG Beeping Control	SS SS SS SS	Disable OK and NG beep Enable OK and NG beep◆ Enable OK beep and disable NG beep Enable NG beep and disable OK beep		0 1 2 3	

- The **OK/NG Signal Active State** can control the logic level in digit circuits design, you can adjust the active-high or active-low state for OK and NG signal outputs. The OK and NG signals are NPN outputs.
- The **OK/NG Signal Output Control** can control the OK/NG signal outputs and OK/NG indications of the scanner. If you disable OK or NG signal output, the scanner OK or NG indication will be disabled.
- The **OK/NG Signal Duration** can control the OK/NG signal duration and OK/NG indication duration of the scanner.

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Operation Control

FM480, FA480/FA470/FA460

NG Message Output

Family Code Selection	P.C	Parameter Selection	Option Code
NG Message Output	SS SS SS	None◆ Message "NG" User defined message (1~15 characters) Maximum 15-character input; scan "FIN" to terminate this section.	0 1 2,〔00- 7F〕

Condensed DataWizard
FM480, FA480/FA470/FA460

Preamble, Postamble, Data Length & Symbol ID

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.

FuzzyScan Fixed Mount Scan Programming Manual

FuzzyScan Fixed Mount Scan Programming Manual

Family Code Selection	P.C	Parameter Selection	Option Code	2ndOption 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 49 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
FM480, FA480/FA470/FA460
Data Verifier Setting

Family Code Selection	P.C	Parameter Selection	Option Code	2ndOption 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 49 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

FM480, FA480/FA470/FA460

Data Replacer Setting

Family Code Selection	P.C	Parameter Selection	Option Code	2ndOption 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 49 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
FM480, FA480/FA470/FA460
Data Organizer Setting

Family Code Selection	P.C	Parameter Selection	Option Code	2ndOption 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 49 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.

1D Bar Code Symbology			
Code 128	01	Matrix 2 of 5	38
GS1-128	31	Interleaved 2 of 5	48
UPC-A	02	China Postal Code	58
UPC-A with 2 supplement	32	German Postal Code	68
UPC-A with 5 supplement	42	Standard/Industrial 2 of 5	08
UPC-E	03	Code 93	09
UPC-E with 2 supplement	33	Code 11	10
UPC-E with 5 supplement	43	MSI/Plessey	11
EAN-13	04	UK/Plessey	12
EAN-13 with 2 supplement	34	Telepen	13
EAN-13 with 5 supplement	44	GS1 DataBar	14
EAN-8	05	GS1 DataBar Limited	22
EAN-8 with 2 supplement	35	GS1 DataBar Expanded	23
EAN-8 with 5 supplement	45	Composite Codes	24
Codabar/NW-7	06	IATA	15
Code 39	07	Coupon Code	16
Code 32	37	PDF417	17
Trioptic Code 39	47	Micro PDF417	25
		Codablock F	18
		Code 16K	19
		Code 49	20

2D Bar Code Symbology			
QR Code	A0	MaxiCode	A2
MicroQR Code	A0	Aztec Code	A3
DataMatrix	A1	Chinese Sensible Code	A4
GS1 DataMatrix	A5		

Postal Code			
Korea Post Code	21	Japanese Post	B4
Australian Post	B0	KIX Post	B5
British Post	B1	Planet Code	B6
Intelligent Mail barcode	B3	Postnet	B8

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 51 2 3 4 5 69 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.

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[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.

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APPENDIX

Symbology ID Table

Each AIM Code Identifier contains the three-character string **]cm** where:
] = Flag Character;   c = Code Character;   m = Modifier Character

<table>
<tr><th colspan="12">1D Symbology ID Table</th></tr>
<tr><th rowspan="3">Code Family</th><th rowspan="3">Primary Format</th><th colspan="2">Cino ID</th><th colspan="2">AIM ID</th><th rowspan="3">Code Family</th><th rowspan="3">Primary Format</th><th colspan="2">Cino ID</th><th colspan="2">AIM ID</th></tr>
<tr><th>Hex</th><th rowspan="2">Char.</th><th>Code</th><th>Modified</th><th>Hex</th><th rowspan="2">Char.</th><th>Code</th><th>Modified</th></tr>
<tr><th>Value</th><th>Char.</th><th>Char.</th><th>Value</th><th>Char.</th><th>Char.</th></tr>

<tr><td rowspan="6">UPC</td><td>UPC-A</td><td>2</td><td rowspan="3">A</td><td rowspan="6">E</td><td>0</td><td rowspan="6">EAN/JAN</td><td>EAN/JAN-8</td><td>05</td><td rowspan="3">N</td><td rowspan="3">E</td><td>4</td></tr>
<tr><td>UPC-A with 2 supple.</td><td>32</td><td>1</td><td>EAN/JAN-8 with 2 supple.</td><td>35</td><td>1</td></tr>
<tr><td>UPC-A with 5 supple.</td><td>42</td><td>2</td><td>EAN/JAN-8 with 5 supple.</td><td>45</td><td>2</td></tr>
<tr><td>UPC-E</td><td>3</td><td rowspan="3">E</td><td>0</td><td>EAN/JAN-13</td><td>04</td><td rowspan="3">F</td><td rowspan="3">E</td><td>0</td></tr>
<tr><td>UPC-E with 2 supple.</td><td>33</td><td>1</td><td>EAN/JAN-13 with 2 supple.</td><td>34</td><td>1</td></tr>
<tr><td>UPC-E with 5 supple.</td><td>43</td><td>2</td><td>EAN/JAN-13 with 5 supple.</td><td>44</td><td>2</td></tr>

<tr><td></td><td colspan="5">Example: A UPC-A bar code 012345678950 with 2 supplement 12 is transmitted as]E0012345678950]E112</td><td></td><td colspan="5">Example: A EAN/JAN-8 bar code 49123562 with 5 supplement 12345 is transmitted as]E449123562]E212345</td></tr>

<tr><td rowspan="2">Code 128</td><td>Code 128</td><td>01</td><td>B</td><td rowspan="2">C</td><td>m</td><td>Code 93</td><td>Code 93</td><td>09</td><td>H</td><td>G</td><td>m</td></tr>
<tr><td>GS1-128</td><td>31</td><td>C</td><td>1</td><td>Code 11</td><td>Code 11</td><td>10</td><td>P</td><td>H</td><td>m</td></tr>

<tr><td>Codabar</td><td>Codabar/NW-7</td><td>06</td><td>D</td><td>F</td><td>m</td><td>MSI/Plessey</td><td>MSI/Plessey</td><td>11</td><td>R</td><td>M</td><td>m</td></tr>

<tr><td rowspan="5">Code 25</td><td>Standard/Industrial 2 of 5</td><td>08</td><td>I</td><td>S</td><td>0</td><td>UK/Plessey</td><td>UK/Plessey</td><td>12</td><td>S</td><td>P</td><td>0</td></tr>
<tr><td>Matrix 2 of 5</td><td>38</td><td>K</td><td>X</td><td>0</td><td>Telepen</td><td>Telepen</td><td>13</td><td>T</td><td>B</td><td>m</td></tr>
<tr><td rowspan="2">Interleaved 2 of 5</td><td rowspan="2">48</td><td rowspan="2">J</td><td rowspan="2">I</td><td rowspan="2">m</td><td rowspan="3">GS1 DataBar</td><td>GS1 Databar</td><td>14</td><td rowspan="6">X</td><td rowspan="6">e</td><td rowspan="6">m</td></tr>
<tr><td>GS1 DataBar Limited</td><td>22</td></tr>
<tr><td rowspan="2">China Postal Code</td><td rowspan="2">58</td><td rowspan="2">L</td><td rowspan="2">X</td><td rowspan="2">0</td><td>GS1 DataBar Expanded</td><td>23</td></tr>
<tr><td>Composite</td><td>Composite Code</td><td>24</td></tr>
<tr><td rowspan="2">German Postal Code</td><td rowspan="2">68</td><td rowspan="2">M</td><td rowspan="2">I</td><td rowspan="2">m</td><td rowspan="3">Code 39</td><td>Code 39</td><td>07</td><td>G</td><td>A</td><td>m</td></tr>
<tr><td>Code 39 Trioptic</td><td>47</td><td>W</td><td>X</td><td>0</td></tr>
<tr><td>IATA</td><td>IATA</td><td>15</td><td>O</td><td>R</td><td>m</td><td>Code 32</td><td>37</td><td>G</td><td>A</td><td>0</td></tr>

<tr><td rowspan="4">UCC Coupon</td><td>UCC Coupon Code</td><td colspan="4" rowspan="2">Z</td><td rowspan="2">PDF417</td><td>PDF417</td><td>17</td><td rowspan="2">V</td><td rowspan="2">L</td><td rowspan="2">m</td></tr>
<tr><td>Micro PDF417</td><td>25</td></tr>
<tr><td rowspan="2">Example : A UPC-A 512345678900 + GS1-128 81010123451297 bar code is transmitted as]E0512345678900]C181010123451297
Example: A EAN-13 9923456789019 + GS1-128 81010123451297 bar code is transmitted as]E09923456789019]C181010123451297</td><td colspan="4"></td><td>Codablock</td><td>Codablock F</td><td>18</td><td>Y</td><td>O</td><td>m</td></tr>
<tr><td>Korea Post</td><td>Korea Post Code</td><td>21</td><td>a</td><td>X</td><td>0</td></tr>

<tr><td colspan="6"></td><td colspan="6">Remark: Above examples are given for the transmission of AIM ID.</td></tr>
</table>

2D Symbology ID Table											
Code Family	Primary Format	Cino ID		AIM ID		Code Family	Primary Format	Cino ID		AIM ID	
		Hex Value	Char.	Code Char.	Modified Char.			Hex Value	Char.	Code Char.	Modified Char.
QR Code	QR Code	A0	b	Q	m	British Post	British Post	B1	h	X	0
Micro QR Code	Micro QR Code					Intelligent Mail barcode	Intelligent Mail barcode	B3	j		0
Data Matrix	Data Matrix	A1	c	d	m	Japanese Post	Japanese Post	B4	k		0
	GS1 Data Matrix	A5									
MaxiCode	MaxiCode	A2	d	U	m	KIX Post	KIX Post	B5	l		0
Aztec Code	Aztec Code	A3	e	z	m	Planet Code	Planet Code	B6	m		0
Chinese Sensible	Chinese Sensible	A4	f	X	0	Postnet	Postnet	B8	o		0
Australian Post	Australian Post	B0	g		0						

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Keyboard Function Code Table

No.	ANSI	ASCII	Key Function 1	Key Function 2	Key Function 3
00	NUL	00H	RESERVED	Ctrl + @	CTRL MAKE (Left)
01	SOH	01H	CTRL (Left)	Ctrl + A	CTRL BREAK (Left)
02	STX	02H	ALT (Left)	Ctrl + B	ALT MAKE (Left)
03	ETX	03H	SHIFT	Ctrl + C	ALT BREAK (Left)
04	EOT	04H	CAPS LOCK	Ctrl + D	CAPS LOCK
05	ENQ	05H	NUM LOCK	Ctrl + E	NUM LOCK
06	ACK	06H	ESC	Ctrl + F	ESC
07	BEL	07H	F1	Ctrl + G	F1
08	BS	08H	BACK SPACE	Ctrl + H	BACK SPACE
09	HT	09H	TAB	Ctrl + I	TAB
10	LF	0AH	F2	Ctrl + J	F2
11	VT	0BH	F3	Ctrl + K	F3
12	FF	0CH	F4	Ctrl + L	F4
13	CR	0DH	ENTER (CR)	Ctrl + M	ENTER (CR)
14	SO	0EH	F5	Ctrl + N	F5
15	SI	0FH	F6	Ctrl + O	F6
16	DLE	10H	F7	Ctrl + P	F7
17	DC1	11H	F8	Ctrl + Q	F8
18	DC2	12H	F9	Ctrl + R	F9
19	DC3	13H	F10	Ctrl + S	F10

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No.	ANSI	ASCII	Key Function 1	Key Function 2	Key Function 3
20	DC4	14H	F11	Ctrl + T	WIN MAKE (Left)
21	NAK	15H	F12	Ctrl + U	WIN BREAK (Left)
22	SYN	16H	INS (Insert) (Edit)	Ctrl + V	SHIFT MAKE (Left)
23	ETB	17H	DEL (Delete) (Edit)	Ctrl + W	SHIFT BREAK (Left)
24	CAN	18H	HOME (Edit)	Ctrl + X	HOME (Edit)
25	EM	19H	END (Edit)	Ctrl + Y	END (Edit)
26	SUB	1AH	PAGE UP (Edit)	Ctrl + Z	PAGE UP (Edit)
27	ESC	1BH	PAGE DOWN (Edit)	Ctrl + [	PAGE DOWN (Edit)
28	FS	1CH	UP (Edit)	Ctrl + \	UP (Edit)
29	GS	1DH	DOWN (Edit)	Ctrl +]	DOWN (Edit)
30	RS	1EH	LEFT (Edit)	Ctrl + 6	LEFT (Edit)
31	US	1FH	RIGHT (Edit)	*see below note	RIGHT (Edit)

To emulate the keyboard function key input for user definable parameters, user must configure actual content using the **Reserved ASCII00 – 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.

The last character in the Ctrl Output column is varied for different countries.

Country *(refer to Keyboard Layout)* **& Character**					
United State	-	Switzerland	-	France	=
Belgium	-	UK	-	Germany	-
Sweden	-	Denmark	-	Norway	-
Spain	-	Italy	-		

Code Page – Table of Corresponding Languages

| Description	Code Page	Description	Code Page
Albanian	850	Hungarian	852
Arabic	1256	Icelandic	850
Arabic	720	Italian	850
Baltic	1257	Japanese	932
Bulgarian	866	Korean	949
Catalan	850	Latin 1	1252
Croatian	852	Latin 2	1250
Cyrillic	1251	Latin 5	1254
Czech	852	Latin American	850
Danish	850	Latvian	775
Dutch	850	Lithuanian	775
Estonian	775	Norwegian	850
English - United Kingdom	850	Polish	852
English - Australia	850	Portuguese	850
English - Canada	850	Romanian	852
English - New Zealand	850	Russian	866
English - United States	437	Serbian	855
English - South Africa	437	Slovakian	852
English - Philippines	437	Slovenian	852
Finnish	850	Spanish	850
French	850	Swedish	850
German	850	Chinese (Tradition)	950
Greece	737	Chinese (Simple)	936
Greece	1253	Thai	874
Hebrew- write	1255	Turkish	857
Hebrew Israel	862	Vietnamese	1258

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Code Page – Unicode Hex Input Setup

1. **Windows- Setting up the Windows Registry**

   Step 1: Open the Registry Editor. You can do so by typing "regedit" in the "Search Windows" function or in Command Prompt.
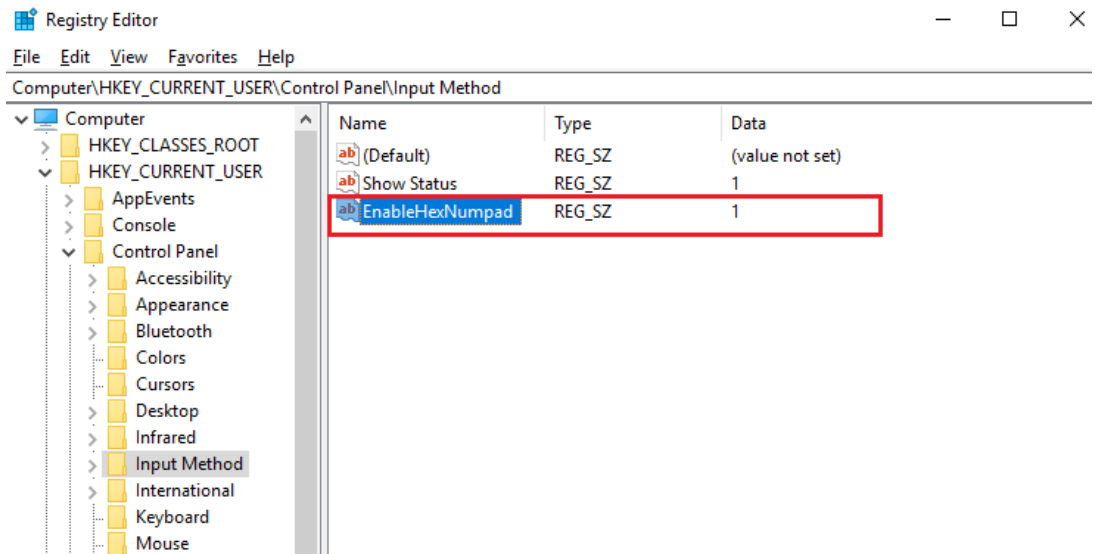
   Step 2: Go to HKEY_CURRENT_USER\Control Panel\Input Method
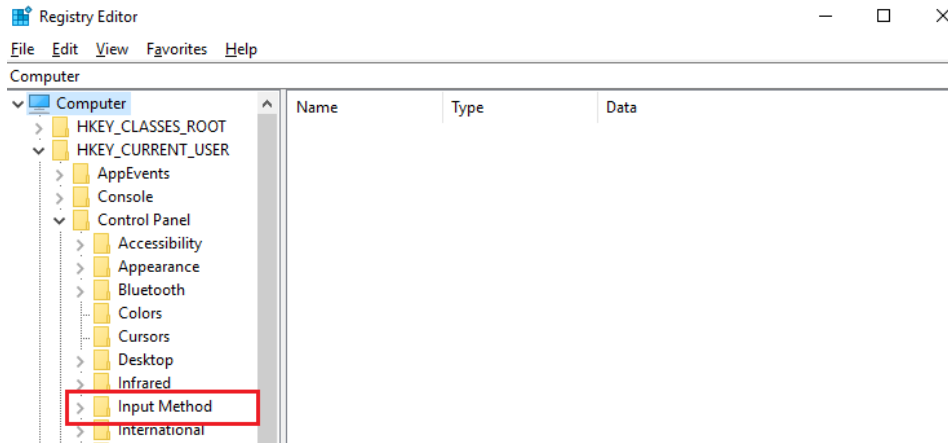
   Step 3: Right-click on mouse or press shift + F10 (on keyboard) to add a new String Value (of type "REG_SZ").

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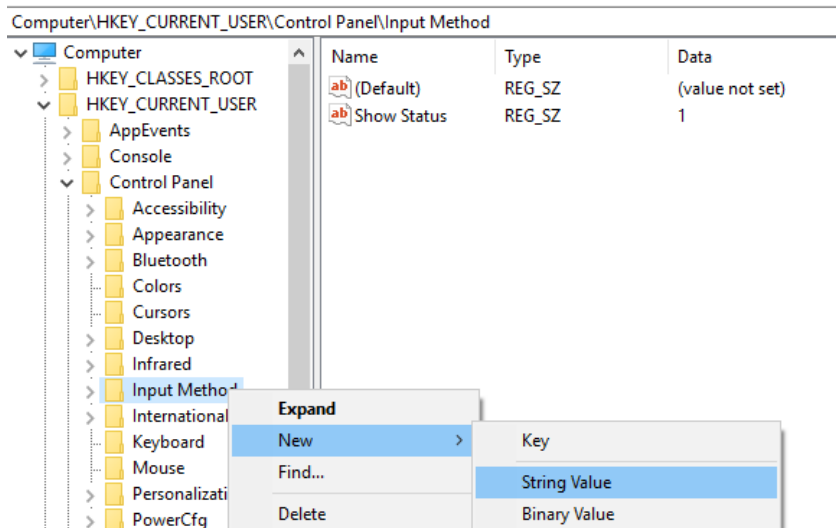
Step 4: Name the new String value as "EnableHexNumpad" and set its Value data to "1".
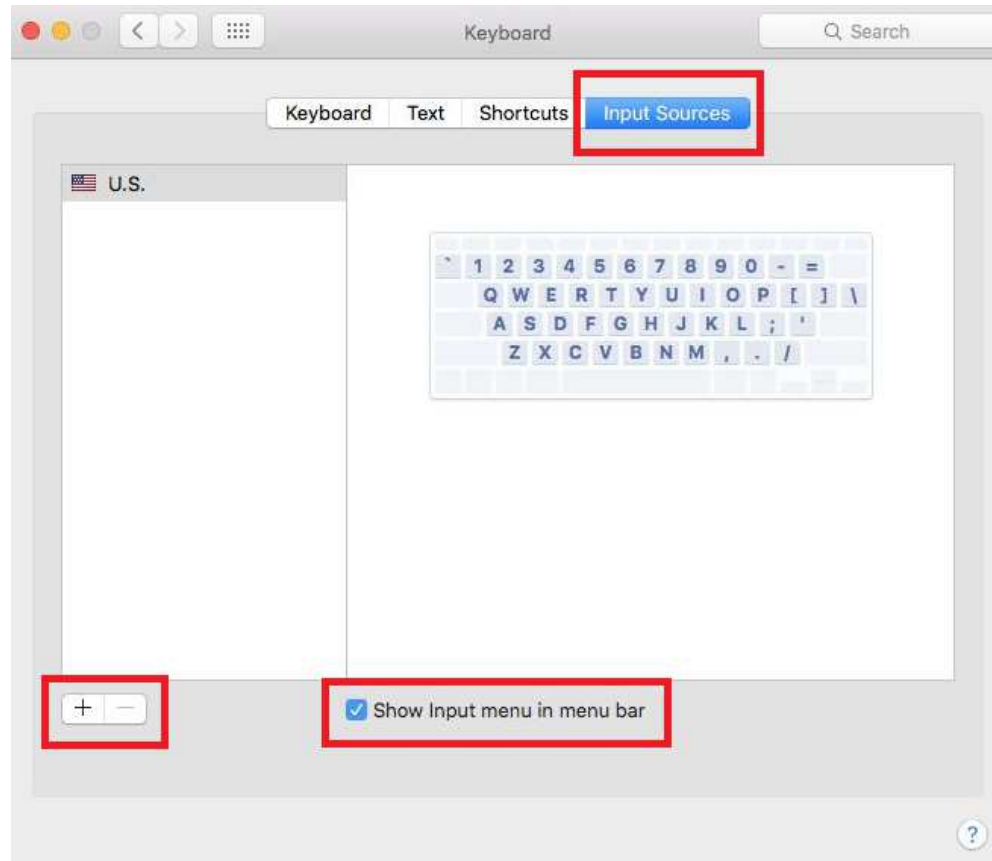

Step 5: Reboot the computer.

2. <u>MAC</u> **- Adding Unicode Hex Input in menu bar**

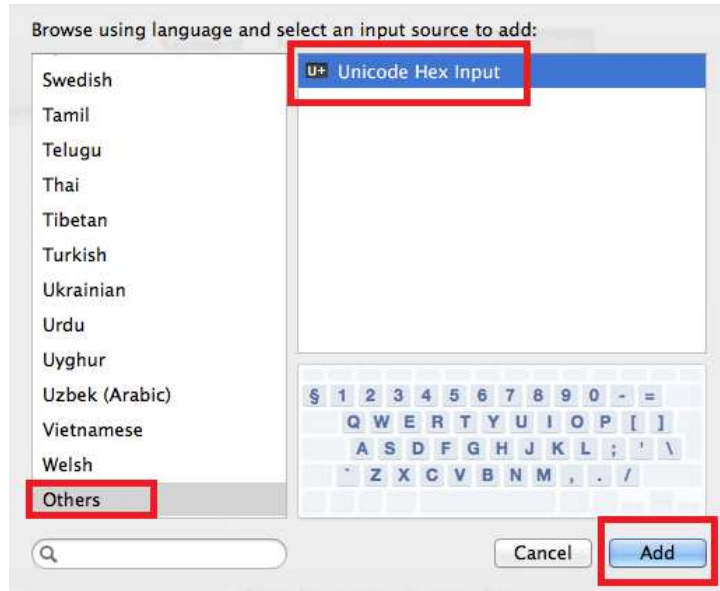**Step 1:** Go to the Apple Menu -> System Preferences -> Keyboard

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Step 2: On the Keyboard tab, click on "Input Sources" and check the "Show Input menu in menu bar" box.

Step 3: Click the "+" button to add an input source.

Step 4: Scroll to and select "Others". Click on "Unicode Hex Input" (you can also use the Search function to find it). When done, click on the "Add" button.

Step 5: Close the Keyboard Preferences menu.

Step 6: Change the input selection to Unicode Hex Input in menu bar.

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 Commands

RS232 Serial

USB Com Port Emulation

USB HID Standard Mode

USB HID Turbo Mode

Operation Mode Quick Set Commands

FM480

◆Trigger Mode

Presentation Mode(Auto sensing)

Alternative Mode (Periodic power off)

Force Mode (Continued power on)

Level Mode (Auto power off)

FA480/FA470/FA460

◆Trigger Mode

Presentation Mode (Auto sensing)

Alternative Mode (Periodic power off)

Force Mode (Continued power on)

Level Mode (Auto power off)

Option Codes

0

1

2

3

4

5

6

7

8

9

A

B

C

D

E

F

FIN (Finish)

Abort

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.
- **User Default:** After scanning" Save User Default" command, all current parameters will be stored to the flash memory. Once you change the parameter and would like to return to previous setting, please scan "User Default".

Indications

FM480
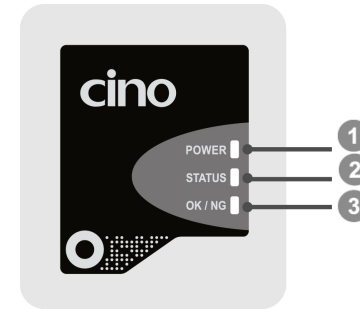
FA480/FA470/FA460

Normal Operation

Descriptions	Indicators			Beeper
	Power	**Status**	**OK/NG**	**Beeper**
Power on	Steady blue	Off	Off	Power on beep
Good read (OK reading)	Off	Off	1 green blink	1 good read beep
No read (NG reading)	Off	Off	1 red blink	1 no read beep

Intelli Button™ Reading Rate Information

Reading Rate	Indicators			Beeper
	Power	**Status**	**OK/NG**	**Beeper**
100%	1 blue blink per 1 sec.	Steady Green	Steady Green	One short beep
80 to 99%		Steady Red	Steady Green	
50 to 79%		Steady Green	Steady Red	
20 to 49%		Steady Orange	Steady Orange	
0 to 19%		Steady Red	Steady Red	

Fixed Mount Scanner Programming Manual

cino