

# FUZZYSCAN

## WIRELESS IMAGER

**Reference Manual**  
International Edition, Rev. A4

**cino**

## Revision History

Rev. No.	Released Date	Description
Rev.A	Oct. 16, 2009	First Release
Rev.A1	Oct. 22, 2009	<ul style="list-style-type: none"> <li>❖ Page 6 Revise “Clone” function operation method.</li> <li>❖ Page 68 Add “Save Configuration” and “Master Default” quick set commands.</li> </ul>
Rev.A2	Nov. 27, 2009	<ul style="list-style-type: none"> <li>❖ Page 53 Bluetooth Device Name – Modify user define characters from 1 – 14 characters to <b>1 – 16</b> characters.</li> <li>❖ Page 69 Add scanner and cradle indications.</li> </ul>
Rev.A3	Mar. 05, 2010	<ul style="list-style-type: none"> <li>❖ Page 25 Modify UPC-E/EAN-8 expansion and UPC-A standardization.</li> <li>❖ Page 43 Rename “Time Out Control” to “<b>Serial Response Time-out</b>”.</li> <li>❖ Page 45 Rename “Presentation Scanning Mode” to “<b>Presentation Control</b>”.</li> <li>❖ Page 48 Rename “Auto Power Off Duration” to “<b>Light Source On Time</b>”. Add “Extremely short” option to Good Read Duration.</li> <li>❖ Page 49 Rename “Presentation Scanning Auto-sense” to “<b>Presentation Auto-sense</b>”. Add “Presentation Sensitivity”</li> </ul>
Rev.A4	Apr. 27, 2010	<ul style="list-style-type: none"> <li>❖ Page 38 Hands Free Time out – Add “<b>Disable</b>”.</li> <li>❖ Page 43 Baud Rate – Add 57.6K BPS and 115.2K BPS.</li> </ul>

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### Regulatory



FCC part 15B, FCC part 15C



EN55022, EN55024, EN60950-1, EN301 489-1 & 489-17, EN300 328

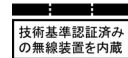


CNS13438, CNS14336



LP0002

2.4 FH 1



MIC T401

**LED Eye Safety**

IEC60825-1, EN60825-1

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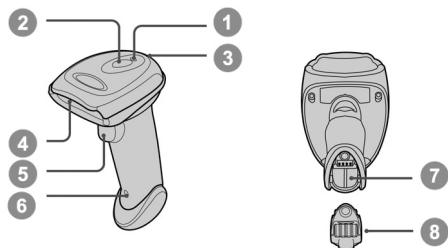
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## Getting Familiar with Your FuzzyScan

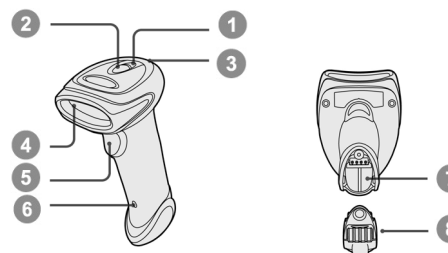
Thank you for choosing Cino FuzzyScan Bluetooth Cordless Image Scanner. Powered by the combination of cutting-edge FuzzyScan 2.0 Imaging Technology and Bluetooth 2.1 EDR wireless technology, it not only provides outstanding reading performance, but also delivers the convenience and freedom of mobility. This document provides a quick reference for installation and operation purposes. The complete documentation is available at [www.cino.com.tw](http://www.cino.com.tw).

### F700BT Series Scanner



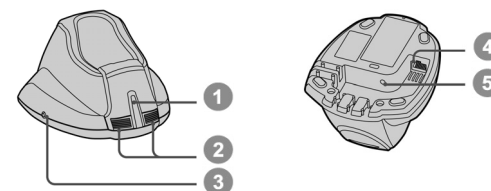
- 1 Link Indicator
- 2 Status Indicator
- 3 Beeper
- 4 Scan Window
- 5 Trigger
- 6 Reset Button
- 7 Battery Cavity
- 8 End Cap

### F600BT Series Scanner



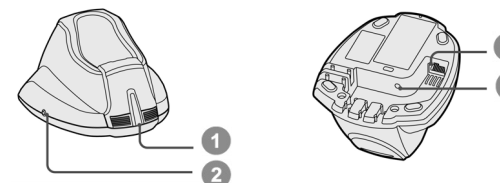
- 1 Link Indicator
- 2 Status Indicator
- 3 Beeper
- 4 Scan Window
- 5 Trigger
- 6 Reset Button
- 7 Battery Cavity
- 8 End Cap

### HB2110 Smart Cradle (Base)



- 1 Center Indicator
- 2 Side Indicators
- 3 Paging/Reset Button
- 4 Host Interface Port
- 5 DC Power Jack

### HB2100 Charging Cradle (Base)

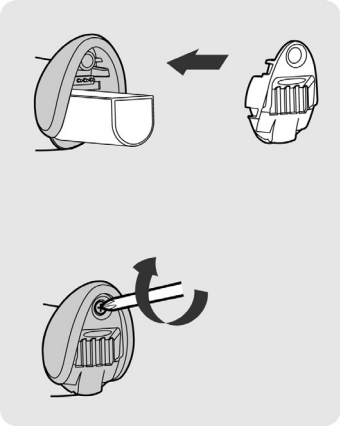



- 1 Power Indicator
- 2 Reserved
- 3 Reserved
- 4 DC Power Jack



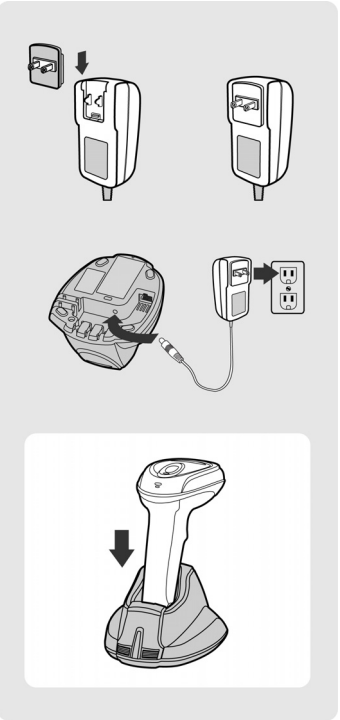
# Preparation before Using


## Install the Battery



- 1 Ensure the battery contacts of the battery pack are facing the charging contacts inside the battery cavity. 
- 2 Slide the battery pack into the battery cavity until hearing a click sound before locking it with the end cap. The scanner will give 4 beeps when the battery pack is installed properly if the battery pack still has power.
- 3 Secure the end cap with the screw provided, and make sure the end cap is secured properly before using the scanner.

## Charging the Battery



- 1 There are 4 different power plugs in your power supply kit. Choose the appropriate local plug and slot it onto the power adapter cavity until it is locked.
  - 2 Plug the AC power plug into the appropriate AC wall socket.
  - 3 Plug the DC power cord of the power supply unit into the DC power jack of the cradle. The smart cradle will issue the power on beeps and the center indicator will give **one blue blink**. If you use the charging cradle, please check the power indicator of the charging cradle turns **steady blue**.
  - 4 Place the scanner on the cradle. The status indicator of scanner will turn **steady red** if the battery is not fully charged. When the battery is fully charged, the status indicator of scanner will **flash green** at regular interval.
-  **Please charge the new battery pack for 8 hours prior to the first use.**

## Decide Your Radio Link Mode

The FuzzyScan Bluetooth image scanner provides several radio link modes to communicate with most host devices. When the Bluetooth-enabled host device is not available, it can work with the smart cradle in PAIR mode (one to one connection) or PICO mode (multiple connections) to provide a plug-and-play cordless migration of your existing non-Bluetooth-enabled IT assets. Moreover, you are also able to use the scanner to work with Bluetooth-enabled host devices via SPP master/slave modes and HID mode.

After losing the radio link, the scanner is capable of resuming the radio connection automatically while it returns to the communication coverage. But please note that this feature is not available in SPP slave mode. If you would like to change the radio link mode, you have to scan the “Uninstall” command to revert the scanner to uninstall state.

### PAIR Mode

If the Bluetooth device is not available in your existing system, this is the simplest plug-and-play solution. In this mode, one scanner can only work with one smart cradle. The smart cradle not only provides the Bluetooth radio link with the scanner, but also offers the legacy cabled interfaces to the host device, including USB HID, USB COM, PS/2(DOS/V) Keyboard Wedge and RS232 Serial.

### PICO Mode

For the requirement of multiple connections, up to 7 scanners can be connected to one smart cradle concurrently. If you would like to un-pair all paired scanners and smart cradle, you can simply press and hold the paging/reset button of the smart cradle for over 3 seconds. If you just want to un-pair part of the paired scanners, please take those paired scanners to scan the “Uninstall” command one by one.

### HID Mode

Through the most helpful HID service, the scanner can work like a Bluetooth keyboard. In this mode, the scanner is discoverable by the radio connection request issued by a remote host device. For security purpose, you will be requested to input the PIN Code to establish the Bluetooth connection in most time.

### SPP Master/Slave Mode

Through the standard SPP service, the scanner can work like a serial input device. In SPP master mode, the scanner initiates the radio connection request to a remote slave device. In SPP slave mode, the scanner is discoverable by the radio connection request issued by a remote master device.

## Using FuzzyScan in PAIR Mode

- 1 Ensure the battery is fully charged. You may refer to the section of **Preparations before Using** for details.
- 2 Please choose your desired interface cable, then plug it into the host interface port of the smart cradle and connect it to the host device.



- 3 Turn on the power of your host device.
- 4 Please note that the scanner has been pre-paired already, if the scanner is shipped together with the smart cradle. You will see the link indicator of scanner gives 1 blue blink per 2.5 seconds and the middle indicator of smart cradle turns steady blue. If the scanner and smart cradle just give **alternating red and green blinks** (in “Uninstall” state), please follow steps 5-6 to establish the connection between the scanner and the smart cradle.
- 5 Scan “PAIR mode” command. The status indicator of scanner will turn steady red.




Uninstall



PAIR Mode

- 6 Place the scanner on the smart cradle, then you will hear one short beep to indicate the pairing process is activated. The scanner will give continuous short clicks and the link indicator of scanner will flash blue quickly during the pairing process. When you hear 4 beeps in ascending tone, the pairing process is completed. You will see the link indicator of scanner giving **1 blue blink per 2.5 seconds** and the center indicator of the smart cradle turning **steady blue**.

If the scanner pairing process failed or it's not placed on the smart cradle within 20 seconds, you will hear 2 “Di-do Di-do” beeps to indicate pair failure, the scanner will return to uninstall state automatically.

- 7 Scan the corresponding host interface quick set command to complete the installation.
-  **The default host interface of smart cradle is preset to USB HID. If you want to set the host interface to USB COM, you have to install the USB virtual COM driver into your host device before using the scanner. Please visit the CINO website to download the software driver.**



## Using FuzzyScan in PICO Mode

- 1 Ensure the battery is fully charged and choose your desired interface cable, then plug it into the host interface port of the smart cradle and connect it to the host device.



- 2 Turn on the power of your host device.
- 3 Ensure the side indicators of the smart cradle give **alternative red and green blinks** (in “Uninstall” state). If the smart cradle is paired with other scanners, you can press and hold the paging/reset button for **over 3 seconds** to un-pair all paired scanners. Then the smart cradle will return to uninstall state automatically.
- 4 Prepare the scanners you desire to pair with smart cradle. Ensure the status indicator of each scanner give **alternative red and green blinks** (in “Uninstall” state). If the scanner is not in uninstall state, please scan the “Uninstall” command to un-pair the scanner. Then scan the “PICO mode” command, and the status indicator of scanner will turn steady red.




Uninstall



PICO Mode


- 5 Place the scanner on the smart cradle, then you will hear one short beep to indicate the pairing process is activated. The scanner will give continuous short clicks and the link indicator of scanner will flash blue quickly during the pairing process. When you hear 4 beeps in ascending tone, the pairing process is completed. You will see the link indicator of scanner giving **1 blue blink per 2.5 seconds**, the center indicator of the smart cradle turning **steady blue** and its side indicators turning **steady green**.

If the scanner pairing process failed or it's not placed on the smart cradle within 20 seconds, you will hear 2 “Di-do Di-do” beeps to indicate pair failure, the scanner will return to uninstall state automatically.

- 6 Scan the corresponding host interface quick set command to complete the installation.
  - 7 Please follow the same procedures to pair the other scanners with the smart cradle.
-  **For user's convenience, the smart cradle will automatically assign the ID numbers to each scanner. After completed all pairing processes, you can scan the “System Information” command to check the assigned ID number of each scanner.**

## Clone Function

For the user's convenience, the clone function will help you to clone the host interface related parameters (please refer to following table for details) from one of the paired scanners to the rest of paired scanners under PICO mode. You can use one of the paired scanners to set the host interface related parameters first and then scan "Save Configuration" command. After that, please take the other paired scanners to scan "Clone" command one by one to clone the host interface related parameters.

 **Please ensure to keep those paired scanners in connected status when you use the "Clone" function. Because the host interface related parameters can't be cloned to the paired scanner in disconnected status.**



Save Configuration



Clone

The below host interface related parameters will be impacted by clone function:

Data Transmission Parameter	Serial Interface Control
Field Delimiter	Handshaking Protocol
Data Transmission Format	Intermessage Delay
<b>Host Interface Control</b>	Interfunction Delay
Host interface Selection	Intercharacter Delay
<b>Keyboard Interface Control</b>	Baud Rate
Keyboard Layout	Data Frame
Intermessage Delay	Time Out Control
Interfunction Delay	<b>Wand Emulation Control</b>
Intercharacter Delay	Output Polarity
Caps Lock Control	Initial Signal State
Caps Lock Release Control	Margin Time
Function Key Emulation	Module Time
Key Pad Emulation	Narrow/Wide Ratio
Upper/Lower Case	Code39 Emulation

## Using FuzzyScan in HID Mode

- 1 Ensure the battery is fully charged. Power on the scanner within radio range and ensure the status indicator of scanner gives **alternating red and green blinks** (in “Uninstall” state). If the scanner is not in uninstall state, please scan the “Uninstall” command first. Then scan the “HID Mode” command, and the link indicator of scanner will give 3 blue blinks per 2 seconds.




Uninstall



HID Mode

- 2 Execute the Bluetooth Discovery procedure to find all available Bluetooth devices in your remote host. You will see “CINO FxxxBT-xxxx” is shown in the list if the scanner is successfully discovered already.
- 3 Double click the “CINO FxxxBT-xxxx” in the discovered Bluetooth device list. If the PIN Code or Passkey is requested for security connection, please enter “00000000” (default setting). You will see “Keyboard on CINO FxxxBT-xxxx”, and double click this HID service to establish the connection between the scanner and the remote host device.
- 4 The scanner will give 4 beeps in ascending tone to indicate the radio is connected. At the same time, the link indicator of scanner will give 1 blue blink per 2.5 seconds to indicate the scanner is in radio-connected state.

Please note that if the scanner is not connected to the host device within 1 minute after scanning the “HID Mode” command, the scanner will go to sleep automatically. You just need to press the trigger to wake up the scanner to continue the installation.

1.  **The installation procedures vary on different remote host devices, operation systems and the Bluetooth software driver. Please consult your professional IT consultant to obtain necessary support if any problem has been encountered during the installation processes.**
2. **While using HID mode, beware of potential error in the data transmitted at the same time when radio link quality is poor. You are suggested to use the scanner under the communication coverage all the times.**

## Using FuzzyScan in SPP Mode

### Establish SPP Master Connection

- 1 Ensure the battery is fully charged. Please go to the folder of “**Hardware**” located in Bluetooth Advanced Setting of the remote host device to check its device MAC address. Then prepare a 12-character Code 128 barcode of the remote host device MAC address, or follow the step 4 to input MAC address by scanning 12 option codes.
- 2 Ensure a virtual COM port is available in your remote host for connecting the scanner. If not, please go to the folder of “**Local Services**” located in Bluetooth Advanced Setting. Click the “**Add Serial Services**” to add one more Bluetooth COM port.
- 3 Power on the scanner within radio range and ensure the status indicator of scanner gives **alternating red and green blinks** (in “**Uninstall**” state). If the scanner is not in uninstall state, please scan the “Uninstall” command first. Then scan the “SPP Master Mode” command, and the status indicator of scanner will turn steady red.




Uninstall



SPP Master Mode

- 4 Scan a 12-character MAC address barcode, or scan 12 option codes and “FIN” command to confirm your inputs. The scanner will give continuous short clicks and the link indicator of the scanner will flash blue quickly during the radio connecting process. If the PIN Code or Passkey is requested for security connection, please enter “**00000000**” (default setting).
- 5 The scanner will give 4 beeps in ascending tone to indicate the radio is connected. At the same time, the link indicator of scanner will give 1 blue blink per 2.5 seconds to indicate the scanner is in radio-connected state.

Please note that if the scanner failed to connect to the host device within 30 seconds, the link indicator will give 3 blue blinks per 2 seconds. But the scanner is still continuing to discover the host device for another 30 seconds before go to sleep. In the interim, you still can scan “Uninstall” command to revert the scanner to uninstall state. If the scanner goes to sleep already, you just need to press the trigger to wake up the scanner to continue the installation.

-  **The installation procedures vary on different remote host devices, operating systems and the Bluetooth software driver. Please consult your professional IT consultant to obtain necessary support if any problem has been encountered during the installation processes.**

## Establish SPP Slave Connection

- 1 Ensure the battery is fully charged and a virtual COM port is available in your remote host for connecting the scanner. If not, please go to the folder of “**Client Applications**” located in Bluetooth Advanced Setting. Click the “**Add COM Port**” to add one more Bluetooth COM port.
- 2 Power on the scanner within radio range and ensure the status indicator of scanner gives **alternating red and green blinks** (in “**Uninstall**” state). If the scanner is not in uninstall state, please scan the “Uninstall” command first. Then scan the “SPP Slave Mode” command, and the link indicator of scanner will give 3 blue blinks per 2 seconds.




Uninstall



SPP Slave Mode

- 3 Execute the Bluetooth Discovery procedure to find all available Bluetooth device list in your remote host. You will see “CINO FxxxBT-xxxx” is shown in the list if the scanner is successfully discovered already.
- 4 Double click the “CINO FxxxBT-xxxx” on the discovered Bluetooth devices. If the PIN Code or Passkey is requested for security connection, please enter “**00000000**” (default setting). You will see “Serial Port on CINO FxxxBT-xxxx”, and double click this SPP service to establish the connection between the scanner and the remote host device.
- 5 The scanner will give 4 beeps in ascending tone to indicate the radio is connected. At the same time, the link indicator of scanner will give 1 blue blink per 2.5 seconds to indicate the scanner is in radio-connected state.

Please note that if the scanner is not connected to the host device within 1 minute, the scanner will go to sleep. You can press the trigger to wake up the scanner to continue the installation.

-  **The installation procedures vary on different remote host devices, operating systems and the Bluetooth software drivers. Please consult your professional IT consultant to obtain necessary support if any problem has been encountered during the installation processes.**

## Out-of-range Scanning

When the radio is connected between the scanner and the remote host device, the scanner will transmit each scanned data right after scanning the barcode. However, the scanner is preset for unable to scan any barcode data when it loses the radio connection with the remote host device.

If you enable the out-of-range scanning function, the scanner is able to continue scanning barcode data while it is out of working range. All scanned data will be temporarily stored into the memory buffer until radio link resumed.



Enable Out-of-range Scanning

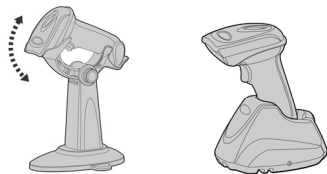


Disable Out-of-range Scanning ◆

In case of the scanner is out of working range, you will hear 4 beeps in descending tone to indicate the radio connection lost. The link indicator of scanner will give 3 blue blinks per 2 seconds. Once the scanner is back to working range, you will hear 4 beeps in ascending tone to indicate the radio connection rebuilt and the scanner will give 1 blue blink per 2.5 seconds. At the same time, all stored scanned data will be transmitted automatically right after the radio link is resumed.

## Presentation Scanning

The Presentation Scanning is designed for hand-free applications for user's convenience. If the "Presentation Scanning Auto-sense" function is enabled, the scanner is capable of automatically switching to presentation mode when you place it onto the SmartStand or cradle.



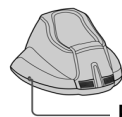
Enable Presentation Scanning Auto-sense



Disable Presentation Scanning Auto-sense ◆

## Paging Function

The paging function is helpful for you to locate the paired smart cradle or scanner. If you would like to page the paired smart cradle, you can scan "Paging" command. If you would like to page the paired scanner, you can press the paging/reset button of the smart cradle **no longer** than 3 seconds.



Paging/Reset Button



Paging



### Batch Scanning (Inventory Mode)

Thanks to the specially designed Batch Scanning function, the scanner is capable of storing the barcode data up to 20,000 EAN-13 labels. It is an ideal cost-saving solution for inventory applications.

Once you scan the “Enter Batch Scanning” command to activate this function, all scanned barcode data will be stored into the memory storage, and the status indicator of scanner will give **green blink** at regular interval during batch scanning. You can scan and store the barcode data till the memory storage is full. If the storage is full, you will hear 2 long beeps and the status indicator will give 2 red blinks to indicate out of storage. To terminate the batch scanning, please scan the “Exit Batch Scanning” command.



Enter Batch Scanning



Exit Batch Scanning

### How to Transmit Stored Data

The scanner is preset to scan the “Transmit Stored Data” command to transmit all stored data. During the transmission process, the scanner will give continuous short clicks and blue blinks. Then the scanner will give two short beeps after data transmission is completed.



Transmit Stored Data

But you are still able to set the scanner to transmit the stored data by placing the scanner onto the cradle as well.



Transmit Stored Data by Scanning Barcode Command ◆



Transmit Stored Data by Placing Scanner onto Cradle



Transmit Stored Data by Scanning Barcode or Placing Scanner onto Cradle

The scanner is preset to keep all the stored data until you scan the “Clear All Stored Data” command. But you are still able to change the setting to “Auto Delete Stored Data after Transmission” as well.



Clear All Stored Data



Auto Delete Stored Data  
after Transmission



Keep Stored Data after  
Transmission ◆

If you scanned a wrong barcode, the “Delete Last Scanned Data” command is helpful to recover mistake. By scanning the “Delete Last Scanned Data” command, the last stored data can be deleted.



Delete Last Scanned Data

### Using Quantity Feature

If you want to input the quantity information of barcode data, you can enter the quantity from 1 to 9999 by scanning the quantity barcodes right after you scanned the barcode data. The quantity information will be stored into the memory storage together with the barcode data.



Quantity 0



Quantity 3



Quantity 5



Quantity 8



Quantity 1



Quantity 4



Quantity 6



Quantity 9



Quantity 2



Quantity 7

There are two ways to output the stored barcode data and quantity information. Please refer to following for details:

- Stored data is transmitted as many times as the quantity indicated.
- Stored data is transmitted together with quantity information in two fields. Please scan “Enable Quantity Field Transmission” command to enable this function. The preset delimiter is “ , ”, but you are able to choose your desired one from FuzzyScan Wireless Reference Manual for details.



Disable Quantity Field Transmission ◆



Enable Quantity Field Transmission



## Bar Code Programming Menu

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

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

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

### System Command

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

### Family Code

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

### Option Code

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

## Programming Procedures

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

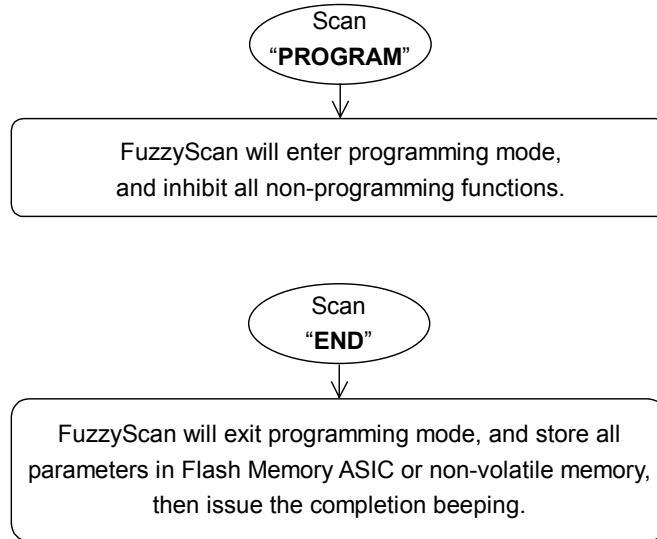
The programming procedures of FuzzyScan are designed as simple as possible for ease of setting. Most programming families take the **Single Scan Selection** programming procedure. But several programming families have more complex and flexible programmable options, and you must take **Multiple Scans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

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

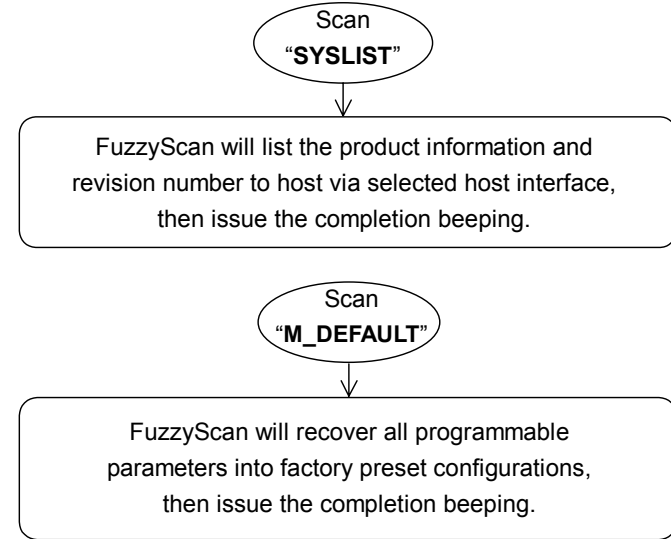
## Conventions of Programming Menu

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

### Program & End

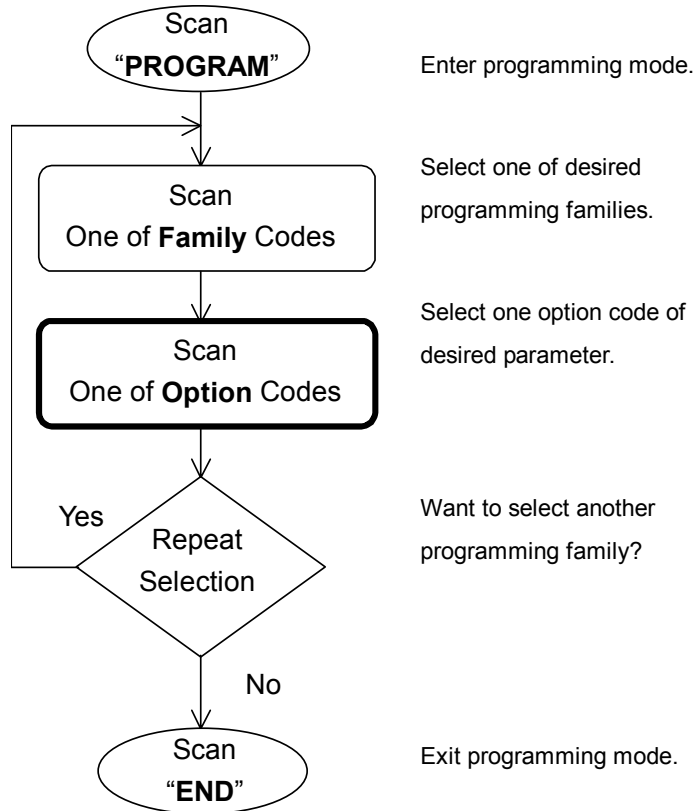


### System List, Group & Master Default

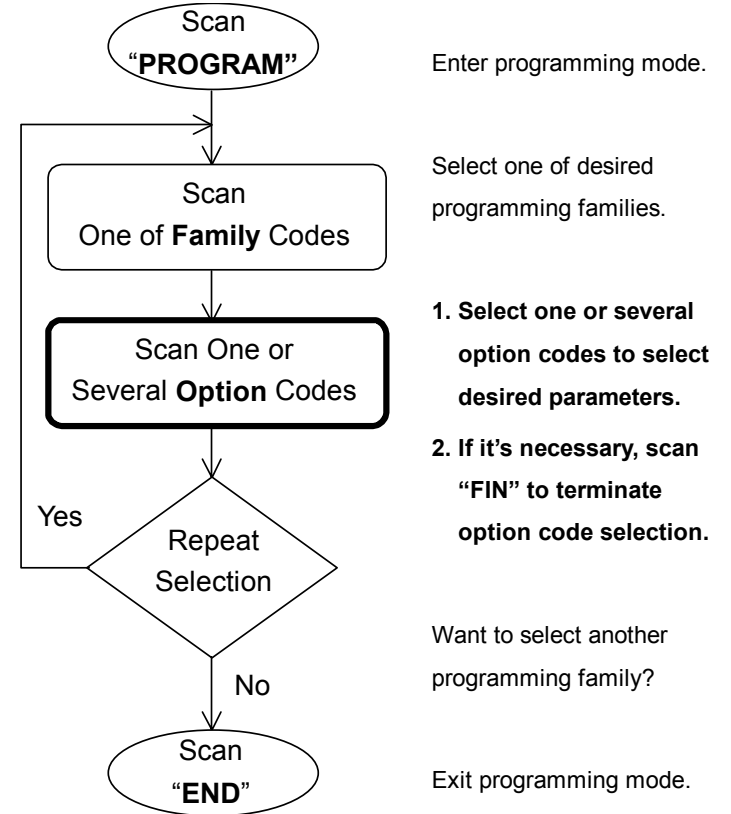


Please note that the FuzzyScan will take 3-4 seconds to store parameters in internal Flash Memory ASIC or non-volatile memory after you scan the “**END**”. Please **don’t** turn off the power before the completion beeping. It may destroy all configured parameters.

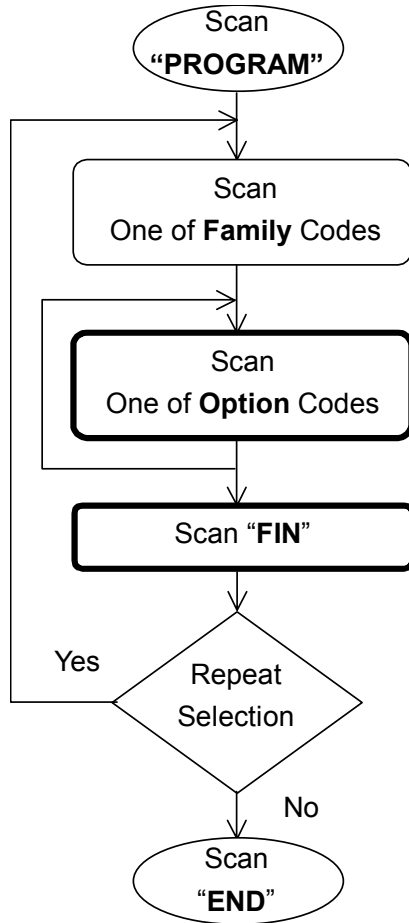
### Single scan selection



### Multiple scans selection



### Cycling scan selection



Enter programming mode.

Select one of desired programming families.

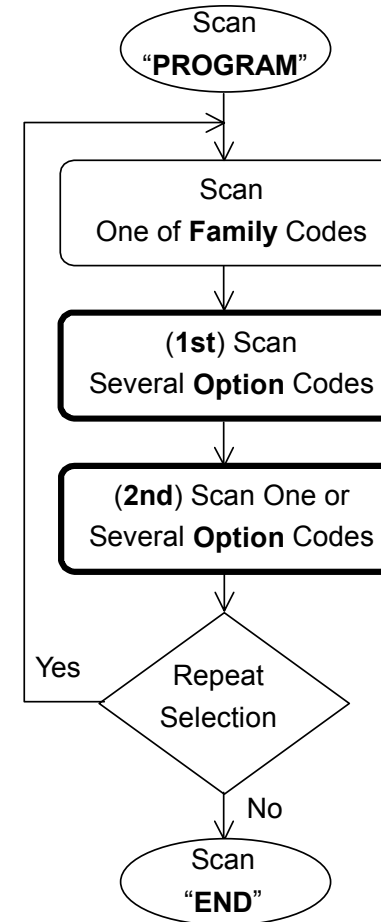
**Cycling select one or several option codes of desired parameters as "Single" or "Multiple" scans selection.**

**Finish cycling selection.**  
(If necessary)

Want to select another programming family?

Exit programming mode.

### Dual level selection



Enter programming mode.

Select one of desired programming families.

**Select several option codes of desired parameters.**

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

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

Want to select another programming family?

Exit programming mode.




PROGRAM

## Host Interface Selection



F\_DEFAULT

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



PROGRAM

## Symbology Reading Control

◆ User Defined Symbol ID ◆



F\_DEFAULT

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




PROGRAM

## Symbology Reading Control

### ◆ Symbology ID Transmission ◆



F\_DEFAULT

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






PROGRAM

## Symbology Reading Control

### ◆ Readable Bar Code Setting ◆



F\_DEFAULT

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

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



PROGRAM

## Symbology Reading Control

### ◆ Code 39/Code 32 Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Code 39 Family Setting</b> 	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
<b>Trioptic Code 39 Setting</b> 	SS	Disable Trioptic Code 39 ◆	0
	SS	Enable Trioptic Code 39	1
<b>Code 39 Min. Length</b> 	SS	Default (01) ◆	<b>FIN</b> <b>(2 digits)</b>
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
<b>Code 39 Max. Length</b> 	SS	Default (98) ◆	<b>FIN</b> <b>(2 digits)</b>
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	

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



PROGRAM

## Symbology Reading Control

### ◆ Codabar/NW-7 Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Codabar Setting</b>  	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	
<b>Codabar Min. Length</b>  	SS	Default (04) ◆	<b>FIN</b> <b>(2 digits)</b>
	MS	01-Maximum  Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
<b>Codabar Max. Length</b>  	SS	Default (98) ◆	<b>FIN</b> <b>(2 digits)</b>
	MS	98-Minimum  Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	



PROGRAM

## Symbology Reading Control

### ◆ UPC-A & UPC-E Setting ◆



F\_DEFAULT

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

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




PROGRAM

## Symbology Reading Control

### ◆ UPC-A & UPC-E Setting ◆



F\_DEFAULT

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

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

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



PROGRAM

## Symbology Reading Control

### ◆ EAN Setting ◆



F\_DEFAULT

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




PROGRAM

## Symbology Reading Control

### ◆ UCC Coupon Extended Code Setting ◆



F\_DEFAULT

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

▪ UCC Coupon Extended Code

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





PROGRAM

## Symbology Reading Control

### ◆ IATA & Interleaved 2 of 5 Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>IATA Setting</b> 	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
<b>Interleaved 2 of 5 Setting</b> 	SS	Disable Interleaved 2 of 5	0
	SS	Enable Interleaved 2 of 5 ◆	1
	SS	Select Interleaved 2 of 5 as primary format ◆	2
	SS	Select German Postal Code as primary format	3
	SS	No check character ◆	4
	SS	Validate USS check digit	5
	SS	Validate OPCC check digit	6
	SS	Disable check digit transmission ◆	7
SS	Enable check digit transmission	8	





PROGRAM

## Symbology Reading Control

### ◆ Code 25 Family Setting ◆



F\_DEFAULT

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

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



PROGRAM

## Symbology Reading Control

### ◆ Code 11 & Code 93 Setting ◆



F\_DEFAULT

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



PROGRAM

## Symbology Reading Control

### ◆ MSI/Plessey Setting ◆



F\_DEFAULT

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






PROGRAM

## Symbology Reading Control

### ◆ Code 128 & UCC/EAN 128 Setting ◆



F\_DEFAULT

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






PROGRAM

## Symbology Reading Control

### ◆ UK/Plessey Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>UK/Plessey Setting</b> 	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
<b>UK/Plessey Min. Length</b> 	SS MS	Default (04) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	<b>FIN</b> <b>(2 digits)</b>
<b>UK/Plessey Max. Length</b> 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	<b>FIN</b> <b>(2 digits)</b>




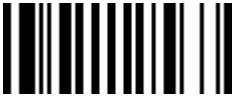

PROGRAM

## Symbology Reading Control

### ◆ Telepen Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Telepen Setting</b> 	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
<b>Telepen Min. Length</b> 	SS	Default (04) ◆	<b>FIN</b> <b>(2 digits)</b>
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
<b>Telepen Max. Length</b> 	SS	Default (98) ◆	<b>FIN</b> <b>(2 digits)</b>
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	



PROGRAM

## Symbology Reading Control

### ◆ GS1 DataBar Setting ◆



F\_DEFAULT

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



PROGRAM

## Symbology Reading Control

### ◆ Linear-stacked & Korea Post Code Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Composite Codes Setting</b> 	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
<b>PDF417/MicroPDF417 Setting</b> 	SS SS SS SS	Disable PDF417 Enable PDF417 ◆ Disable MicroPDF417 ◆ Enable MicroPDF417	0 1 2 3
<b>Codablock F Setting</b> 	SS SS	Disable ◆ Enable	0 1
<b>Korea Post Code Setting</b> 	SS SS	Disable ◆ Enable  Length fixed in 6 characters.	0 1

■ Composite Codes Setting

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

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





PROGRAM

## Keyboard Interface Control

### ◆ Keyboard Layout (Language) Setting ◆



F\_DEFAULT

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

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

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



PROGRAM

## Keyboard Interface Control

◆ Record Suffix, Preamble, Postamble & Caps Lock ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Record Suffix</b> 	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)
<b>Preamble</b> 	SS MS	None ◆ 1-15 characters  Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
<b>Postamble</b> 	SS MS	None ◆ 1-15 characters  Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
<b>Caps Lock Control</b> 	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
<b>Caps Lock Release Control</b> 	SS SS	"Caps Lock On, Caps Off" ◆ "Caps Lock On, Shift Off"	0 1

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



PROGRAM

## Keyboard Interface Control

### ◆ Delay Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Intermessage Delay</b> 	SS MS	None ◆ 1-99 (x10) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	FIN (2 digits)
<b>Intercharacter Delay</b> 	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)
<b>Interfunction Delay</b> 	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.
- **Intermessage Delay, Intercharacter Delay and Interfunction Delay** cannot be only worked under SPP and HID modes.



PROGRAM

## Keyboard Interface Control

### ◆ Emulation Setting & Upper/Lower Case Setting ◆



F\_DEFAULT

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



PROGRAM

## Serial Interface Control

### ◆ Record Suffix, Preamble ,Postamble Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>STX/ETX Control</b> 	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
<b>Record Suffix</b> 	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)
<b>Preamble</b> 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
<b>Postamble</b> 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]

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

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



PROGRAM

## Serial Interface Control

### ◆ Delay Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Intermessage Delay</b> 	SS MS	None ◆ 1-99 (x10) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	<b>FIN</b> <b>(2 digits)</b>
<b>Intercharacter Delay</b> 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	<b>FIN</b> <b>(2 digits)</b>
<b>Interfunction Delay</b> 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	<b>FIN</b> <b>(2 digits)</b>

- **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.
- **Intermessage Delay**, **Intercharacter Delay** and **Interfunction Delay** cannot be only worked under SPP and HID modes.



PROGRAM

## Serial Interface Control

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



F\_DEFAULT

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

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



PROGRAM

## Wand/Laser Emulation Control

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



F\_DEFAULT

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

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

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





PROGRAM

## Operation Control

◆ Operation Mode ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<p>Operation Mode</p>	<p>SS</p> <p>SS</p>	<p>Trigger mode ◆</p> <p>Presentation mode</p>	<p>1</p> <p>2</p>

- **Trigger Mode (External Triggering)** The scanner goes into standby state after scanning the bar code. You must press the trigger to turn on the light source of the scanner before scanning the bar code.
- **Presentation Mode (Auto Detection)** Presentation mode uses ambient light to detect the bar codes. The light source is off until the scanner detects an image which is similar to a barcode. Then the light source turns on automatically to read the bar code. If the light level in the room is not high enough, Presentation Mode may not work properly. You can choose different level of "Presentation Sensitivity" to meet your application (Please refer to the setting of "**Presentation Sensitivity**").



PROGRAM

## Operation Control

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



F\_DEFAULT

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



PROGRAM

## Operation Control

### ◆ Flash Duty Cycle, Redundancy, Delay Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Flash Duty Cycle</b> 	SS SS SS SS	1/2 duty cycle ◆ 2/3 duty cycle 3/4 duty cycle 4/5 duty cycle	0 1 2 3
<b>Redundancy (Scan Voting)</b> 	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
<b>Reread Delay (Double Scan Verification)</b> 	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
<b>Good Read Delay</b> 	SS SS SS SS SS SS SS	None ◆ 200 msec. 500 msec. 1 sec. 1.5 sec. 2 sec. 3 sec.	0 1 2 3 4 5 6

- The **Flash Duty Cycle** is designed to control the flashing frequency of the light source.
- The **Redundancy** is the number of times the same bar code label has to be decoded before it is transmitted.
- The **Reread Delay (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 scanner can read another bar code.



PROGRAM

## Operation Control

### ◆ Time-out Setting, Good Read Beep Duration ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Light Source On Time</b> 	SS SS SS SS	Short ◆ Medium Long Extremely long	0 1 2 3
<b>Hands Free Time-out</b> 	SS SS SS SS SS	Short ◆ Medium Long Extremely long Disable	0 1 2 3 4
<b>Good Read Duration</b> 	SS SS SS SS SS	Short Medium ◆ Long Extremely long Extremely short	0 1 2 3 4

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



PROGRAM

## Operation Control

### ◆ Presentation Scanning Setting & Scan Rate Adjustment ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
<b>SmartStand Power Off Timeout</b> 	SS 3 mins ◆ SS 5 mins SS 10 mins	Only available for FuzzyScan Laser model		0 1 2	
<b>Presentation Auto-sense</b> 	SS Disable ◆ SS Enable			0 1	
<b>Presentation Sensitivity</b> 	SS Level 1 SS Level 2 SS Level 3 SS Level 4 SS Level 5 ◆	Level 6 Level 7		0 1 2 3 4	5 6

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



PROGRAM

## Operation Control

### ◆ Out-of-range Scanning, Sleep Time-out Control ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Out-of-range Scanning</b> 	SS SS	Disable ◆ Enable	0 1
<b>Link Supervision Time-out</b> 	SS SS SS SS SS	1 sec 3 secs ◆ 5 secs 7 secs 9 secs Only available in PAIR & PICO modes	0 1 2 3 4
<b>Sleep Time-out of Connect State</b> 	SS MS	6 (x5) minutes ◆ 0-99 (x5) minutes If you don't want the scanner to enter sleep mode, please set time-out to "0"	<b>FIN</b> <b>(2 digits)</b>
<b>Sleep Time-out of Disconnect State</b> 	SS MS	1 minute ◆ 0-99 minutes If you don't want the scanner to enter sleep mode, please set time-out to "0"	<b>FIN</b> <b>(2 digits)</b>

- **Out-of-range Scanning** When radio link is built between the scanner and remote host device, the scanner will transmit each scanned data right after scanning the barcode data. However, the scanner is preset for unable to scan any barcode data when it loses the radio connection. You can enable the Out-of-range Scanning function to continue scanning barcode data into memory buffer until radio link resumed.
- The **Link Supervision Time-out** is a pre-defined radio link supervision timeout setting. The scanner will supervise the radio link status every preset seconds.
- The **Sleep Time-out Control** can be set under radio connection or disconnection state. If the scanner is not used within the preset time-out duration, it will automatically enter "Sleep State" for power saving purpose. You are able to disable this function by setting the time-out duration to "0".



PROGRAM

## Operation Control

### ◆ Batch Scanning Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Batch Scanning Link Control</b> 	SS SS	Radio disable Radio enable ◆	0 1
<b>Stored Data Transmission</b> 	SS SS SS	All On cradle Scan barcode ◆	0 1 2
<b>Delete Stored Data after Transmission</b> 	SS SS	Disable ◆ Enable	0 1

- The **Batch Scanning Link Control** is a pre-defined radio option to control the radio-on or radio-off status under batch scanning operation. Please note that if the radio disable is activated, the radio link will be disconnected once you enter batching scanning. The radio link will be resumed when you transmit the stored data or exit batch scanning.
- The **Stored Data Transmission** is a pre-defined approach when you want to transmit the scanned data under batch scanning operation. You can transmit the scanned data by placing the scanner onto the cradle or scanning “Transmit Stored Data” command, or by either one of both methods.
- In batching scanning, the default setting of **Delete Stored Data after Transmission** is disable. The scanner will keep all stored data after transmission until you scan the “Clear All Stored Data” command. You are also able to delete all stored data after transmission automatically by enabling this function.






PROGRAM

## Operation Control

### ◆ Batch Scanning Data Transmission Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Field Delimiter</b> 	SS None SS ' ◆ SS SPACE SS - SS . SS User define		0 1 2 3 4 5, [00-7F]
<b>Batch Data Quantity Output Format</b> 	SS As many times as the quantity indicates ◆ SS <Quantity><Field Delimiter><Scanned Data>		0 1
<b>Data Transmission Format</b> 	SS Disable (scanned data only) ◆ SS Leading with MAC address (MAC address and scanned data) SS Leading with ID No. (scanner ID and scanned data)	Only available for RS232, USB HID and USB COM interface in PAIR & PICO modes	0 1 2

- The **Field Delimiter** is used to separate the specific information and scanned data into two fields. You can choose desired delimiter format.
- The **Batch Data Quantity Output Format** If you want to input the quantity information of barcode data, you can enter the quantity from 1 to 9999 by scanning the quantity barcodes right after you scanned the barcode data. The quantity information will be stored into the memory storage together with the barcode data. There are two ways to output the stored barcode data and quantity information.
- In PICO mode, up to 7 scanners can be connected with one smart cradle. The **Data Transmission Format** can help user to identify the source of the transmitted data. You can choose to transmit the scanned data leading with MAC address or pre-assigned ID.  
Example format: <MAC address><Field Delimiter><Data> or <ID><Field Delimiter><Data>.





PROGRAM

## Operation Control

### ◆ Bluetooth Device Name & Security Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>Bluetooth Device Name</b> 	SS MS	Default device name ◆ User define, 1-16 characters	FIN [00-7F], FIN
<b>Bluetooth PIN Code</b> 	SS MS	Default Bluetooth PIN Code ◆ User define, 1-8 numbers	FIN [30-39], FIN
<b>Bluetooth Authentication</b> 	SS SS	Disable Enable ◆	0 1

- The default **Bluetooth Device Name** is "CINO FxxxBT-xxxx", you will be able to change the device name by scanning HEX values (1-16 characters).
- The default **Bluetooth PIN Code** is "00000000", you will be able to change the PIN Code by scanning HEX values (1-8 numbers).
- The **Bluetooth Authentication** You can enable or disable the Bluetooth Authentication between the scanner and remote host device. If this function is enabled, when the scanner wants to connect itself and sends the data to the host device, the host device has to return a link key shared between the scanner and the host device.



PROGRAM

## Operation Control

### ◆ Bluetooth Other Settings ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<b>HID Link Quality Setting</b> 	SS SS	Disable Enable ◆	0 1
<b>Bluetooth Power Saving Mode</b> 	SS SS	Disable ◆ Enable	0 1

- The **HID Link Quality Setting** While using the HID radio link mode, some errors may occur during the data transmission when the radio link is disconnected. You can enable this function to prevent such error from occurring.
- The **Bluetooth Power Saving Mode** Bluetooth module will enter low consumption mode when you enable this function.







PROGRAM

## Condensed DataWizard

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



F\_DEFAULT

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

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



PROGRAM

## Condensed DataWizard

### ◆ Data Formatter Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
<b>Formatter Control</b> 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
<b>1st Insertion</b> 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
<b>2nd Insertion</b> 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
<b>3rd Insertion</b> 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
<b>4th Insertion</b> 	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 60 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.



PROGRAM

## Condensed DataWizard

### ◆ Data Verifier Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
<b>Verifier Control</b> 	SS <b>MS</b> MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	<b>FIN</b> (2 digits) <b>00</b>	automatic termination automatic termination
<b>Identified Data Length</b> 	SS <b>MS</b>	Disable ◆ Enable Determine the identified data length for verification.	<b>FIN</b> (2 digits)	
<b>1st Identified Character</b> 	SS <b>DS</b>	Disable ◆ Enable 2-digits checking position; 1 identified character	<b>FIN</b> (2 digits) position	[00-7F]
<b>2nd Identified Character</b> 	SS <b>DS</b>	Disable ◆ Enable 2-digits checking position; 1 identified character	<b>FIN</b> (2 digits) position	[00-7F]
<b>3rd Identified Character</b> 	SS <b>DS</b>	Disable ◆ Enable 2-digits checking position; 1 identified character	<b>FIN</b> (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 60 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.



PROGRAM

## Condensed DataWizard

### ◆ Data Replacer Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
<b>Replacer Control</b> 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
<b>1st Replacement</b> 	SS DS	Disable ◆ Enable 2-digits identified position; 1 replacement character	FIN (2 digits) position	[00-7F]
<b>2nd Replacement</b> 	SS DS	Disable ◆ Enable 2-digits identified position; 1 replacement character	FIN (2 digits) position	[00-7F]
<b>3rd Replacement</b> 	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 60 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.



PROGRAM

## Condensed DataWizard

### ◆ Data Organizer Setting ◆



F\_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
<b>Organizer Control</b> 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	<b>FIN</b> <b>(2 digits)</b> 00	automatic termination automatic termination
<b>1st Organization</b> 	SS DS	Disable ◆ Enable 2-digits identified position; Forward/backward data transmission setting	<b>FIN</b> <b>(2 digits)</b> position direction	0 (Forward) ◆ 1 (Backward)
<b>2nd Organization</b> 	SS DS	Disable ◆ Enable 2-digits identified position; Forward/backward data transmission setting	<b>FIN</b> <b>(2 digits)</b> position direction	0 (Forward) ◆ 1 (Backward)
<b>Include/Exclude Control</b> 	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 60 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 60 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table**.



### Select a Bar Code Symbology

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

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

### Position Calculation

#### [Data Formatter]

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

	X		X		X		X		X	
00	01	02	03	04	05					

#### [Data Verifier, Data Replacer, Data Organizer]

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

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

### Application Example

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

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



## Programming Procedure

### [Data Verifier]

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

### [Data Formatter]

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

### [Data Replacer]

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

### [Data Organizer]

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

### [Important Notice]

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

**Verifier** ▶ **Formatter** ▶ **Replacer** ▶ **Organizer**

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

## Symbology ID Table

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

**J** = Flag Character


**c** = Code Character

**m** = Modifier Character

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

## Keyboard Function Code Table

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

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

## ASCII Input Shortcut

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


### Example:

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

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

## HEX/ASCII Reference Table

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

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

 : High Byte of HEX Value

 : Low Byte of HEX Value

### Link Mode Quick Set



Uninstall



HID Mode



PAIR Mode



PICO Mode

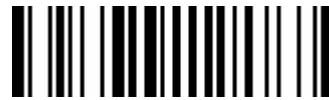


SPP Slave Mode



SPP Master Mode

### Operation Mode Quick Set



Trigger Mode



Presentation Mode

## Host Interface Quick Set

(Work with Smart Cradle only)



RS232 Serial



Keyboard Replacement



USB HID Standard Mode ◆



USB HID Turbo Mode



USB Com Port Emulation



PS/2 (DOS/V) KBW Standard Mode



PS/2 (DOS/V) KBW Turbo Mode

### Option Codes



0



1



2



3



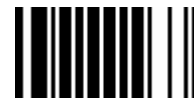
4



5



6



7



8



9



A



B



C



D



E



F



FIN (Finish)



END (Exit)

## System Commands



**PROGRAM**  
(Enter Programming Mode)



**FIN (Finish)**



**END**  
(Exit Programming Mode)



**System Information List**  
(SYSLIST)



**Sleep**



**Paging**



**PowerTool Host Link**



**Save Configuration**




**Clone**



**Factory Default**



**Master Default**

- 
**Factory Default:** After scanning "Factory Default" command, all parameters will be returned to factory default value (The radio link will be disconnected and the scanner will revert to uninstal state).
- 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), **Wand/Laser Emulation Control**, **Bluetooth Device Name**, **Bluetooth PIN Code**, and **Out-of-range Scanning**, the rest of parameters will be returned to default value (The radio link is still keep on).



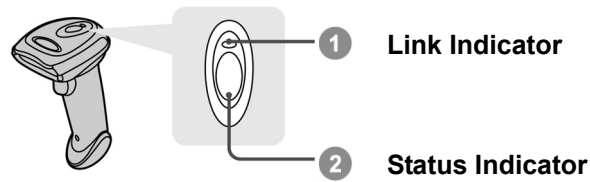
**Save User Default**



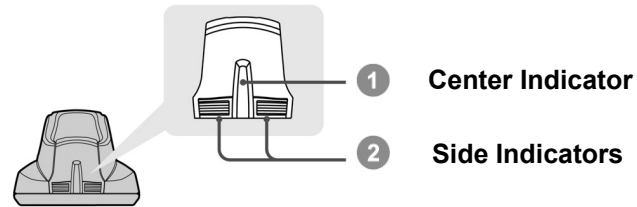
**User Default**



## Indications



Descriptions	Link Indicator	Beeper
Radio connected	1 blue blink per 2.5 sec.	Off
Radio disconnected	3 blue blinks per 2 sec.	Off
During connection	Quick blue blinks	Short clicks
Radio connection built	1 blue blink per 2.5 sec.	4 beeps in ascending tone
Radio connection lost	3 blue blinks per 2 sec.	4 beeps in descending tone
Data Transmission	Quick blue blink	Short clicks
Descriptions	Status Indicator	Beeper
Under charging (on cradle)	Steady red	Off
Fully charged (on cradle)	1 green blink at regular interval	Off
Under batch scanning	1 green blink per 2.5 sec.	Off
Pair failure	Steady red	2 Di-do Di-do beeps
Out of memory	2 red blinks	2 long beeps
Battery power low	1 red blink at regular interval	1 beep at regular interval
Battery power extremely low	8 red blinks	8 beeps
Good read	1 green blink	1 good read beep
Under Configuration	Steady red	Off
Uninstall state	Alternative red and green blinks	Off
Upgrade state	Steady red	Short click
Time out warning	Off	3 long beeps
Paged by smart cradle	Off	6 page beeps
Sleep state / Battery no power	Off	Off



### HB2100 Charging Cradle Indication

Descriptions	Power	Beeper
Power on	Steady blue	Off

### HB2110 Smart Cradle Indications

Descriptions		Indicators		Beeper
		Center	Side	
Power on		1 blue blink	Off	Power on beeps
Smart Cradle Upgrade State		Off	Steady red	Short clicks
Uninstall state		Off	Alternative red-green blinks	Off
PICO Mode	Radio Connected	Steady blue	Steady Green	Off
	Radio Disconnected	Off	Steady red	Off
PAIR Mode	Radio Connected	Steady blue	Off	Off
	Radio Disconnected	Off	Steady red	Off
Smart cradle paged by scanner	PICO Mode	Steady blue	Steady green	6 page beeps
	PAIR Mode	Steady blue	Off	6 page beeps

## FuzzyScan Wireless Reference Manual

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**CINO GROUP**

PC WORTH INT'L CO., LTD. [www.cino.com.tw](http://www.cino.com.tw)