

# FUZZYSCAN

## ON-COUNTER SCANNER

### Programming Manual

International Edition, Rev. A1



**cino**

## Revision History

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**LED Eye Safety**

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## CONFIGURING YOUR SCANNER

### Barcode Programming Manual

The FuzzyScan barcode commands are specially designed **Proprietary** barcode 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 barcode 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 barcode command menu incorporates the barcode command labels of System Command and Option Code. As you set the FuzzyScan, open the barcode 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 barcode 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 barcode.

### 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 barcode 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 barcode command to select the desired parameters, information about the final selected parameters represented by the barcode commands are stored in the FuzzyScan's internal Flash Memory ASIC or 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.

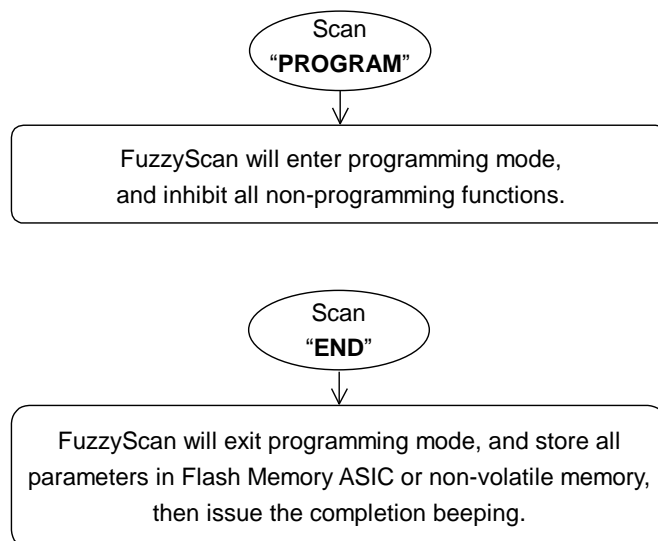
The programming procedures of FuzzyScan are designed as simple as possible for ease of setting. Most programming families take the **Single Scan Selection** programming procedure. But several programming families have more complex and flexible programmable options, and you must take **Multiple Scans 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

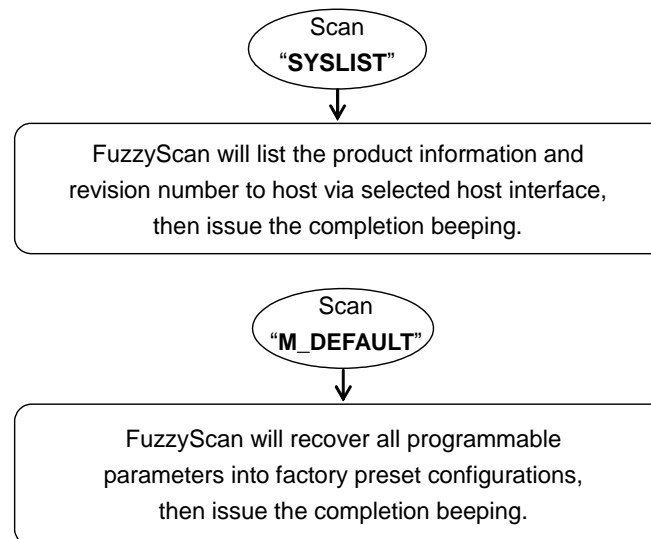
| Conventions | Descriptions  |
|-------------|---|
| ▲           | <b>Factory Default Value</b>  |
| <b>P.C.</b> | <b>Programming Category</b><br><b>SS</b> : Single Scan selection<br><b>MS</b> : Multiple Scans selection<br><b>CS</b> : Cycling Scan selection<br><b>DS</b> : Dual level Scan selection |
| ( )         | <b>Necessary Option Code</b>  |
| [ ]         | <b>Selectable Option Code</b>   |

## Program & End

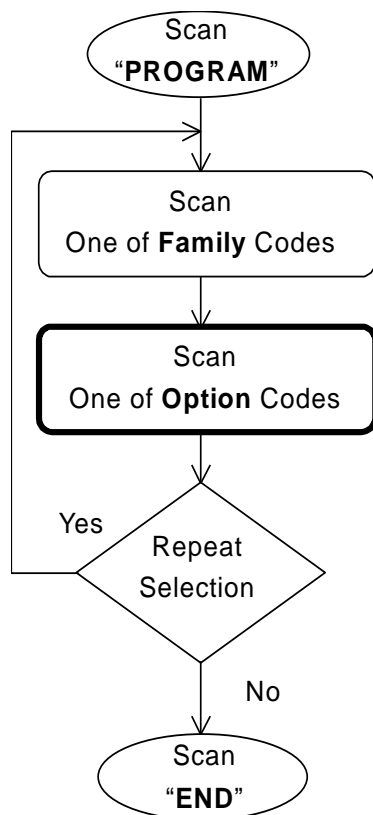


 Please note that the FuzzyScan will take 3-4 seconds to store parameters in internal Flash Memory ASIC or non-volatile memory after you scan the **"END"**. Please **don't** turn off the power before the completion beeping. It may destroy all configured parameters.

## System List, Group & Master Default



## Single scan selection



Enter programming mode.

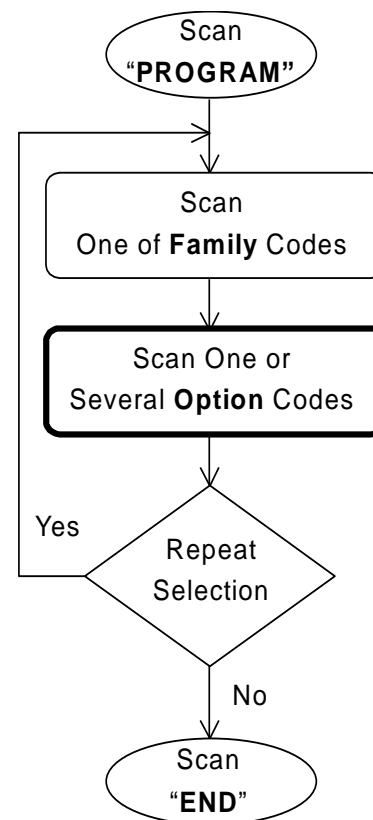
Select one of desired programming families.

Select one option code of desired parameter.

Want to select another programming family?

Exit programming mode.

## Multiple scans selection



Enter programming mode.

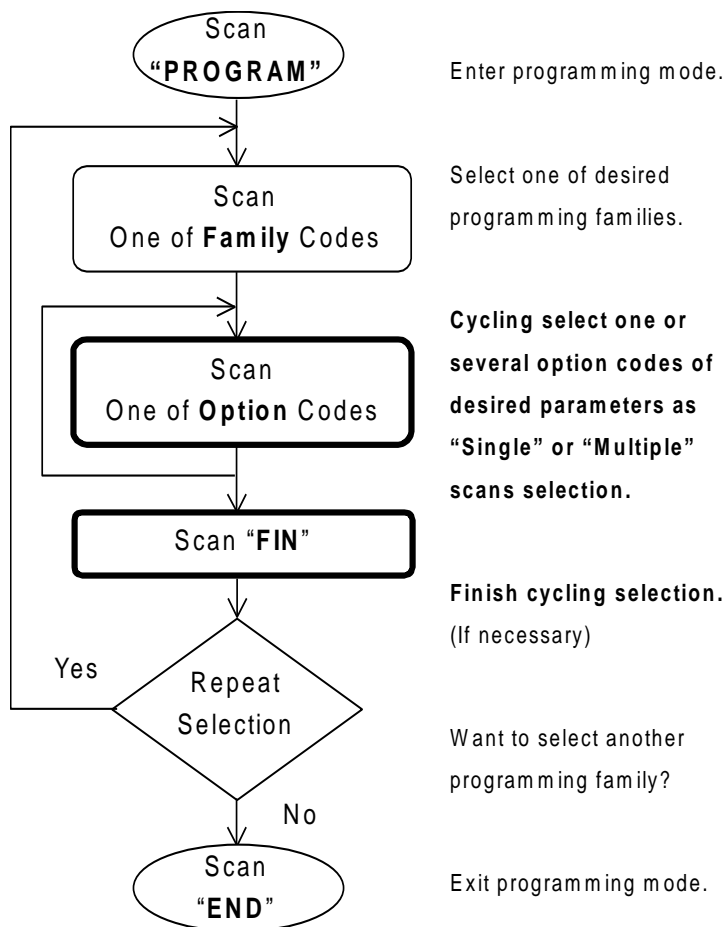
Select one of desired programming families.

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

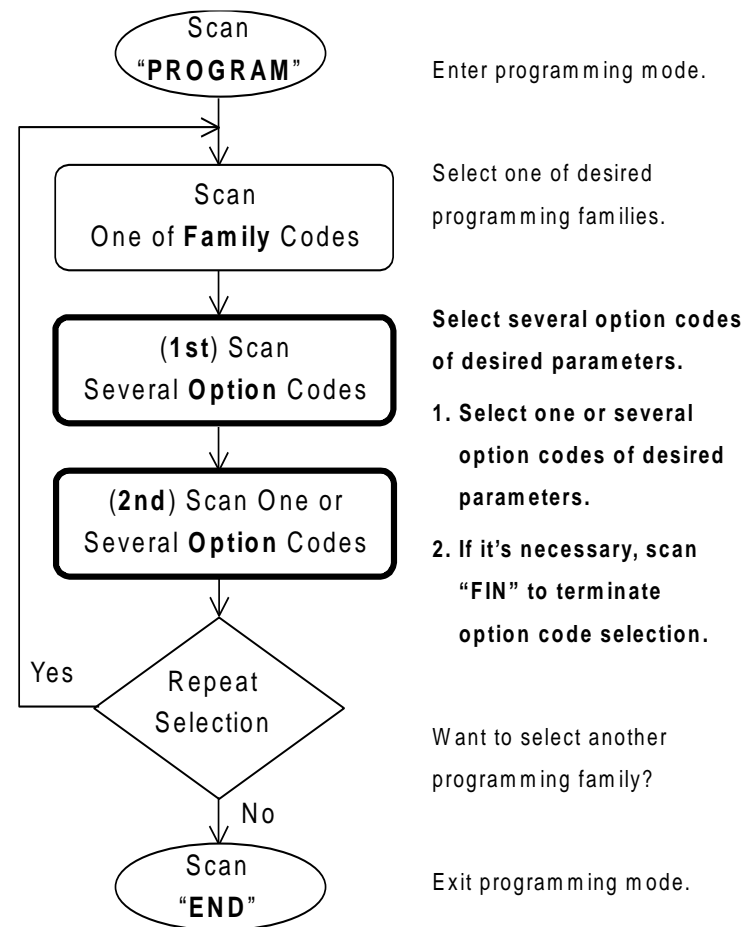
Want to select another programming family?

Exit programming mode.

## Cycling scan selection



## Dual level selection






PROGRAM

## Host Interface Selection



F\_DEFAULT

| Family Code Selection  | P.C | Parameter Selection                             | Option Code |
|--|-----|---|-------------|
| <b>Host Interface Selection</b><br><br> | MS  | IBM PS/2, 25-30 series keyboard wedge interface | 02          |
|  | MS  | Standard/TTL RS-232 peer-to-peer serial         | 06          |
|  | 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  | USB HID standard mode ▲                         | 18          |
|  | MS  | USB HID turbo mode                              | 19          |
|  | MS  | USB HID Legacy                                  | 20          |
|  | MS  | USB EFT Terminal Mode                           | 21          |



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><br> | <b>DS</b> | Code 128 (default= <b>B</b> )<br>GS1-128 (default= <b>C</b> )<br>UPC-A (default= <b>A</b> )<br>EAN-13 (default= <b>F</b> )<br>Codabar/NW-7 (default= <b>D</b> )<br>Code 39/Code 32 (default= <b>G</b> )<br>Code 93 (default= <b>H</b> )<br>Standard/Industrial 2 of 5 (default= <b>I</b> )<br>Interleaved 2 of 5 (default= <b>J</b> )<br>Matrix 2 of 5 (default= <b>K</b> )<br>China Postal Code (default= <b>L</b> )<br>German Postal Code (default= <b>M</b> )<br>IATA (default= <b>O</b> )<br>Code 11 (default= <b>P</b> )<br>MSI/Plessey (default= <b>R</b> )<br>UK/Plessey (default= <b>S</b> )<br>Telepen (default= <b>T</b> )<br>GS1 DataBar (default= <b>X</b> )<br>UPC-E (default= <b>E</b> )<br>EAN-8 (default= <b>N</b> )<br>Trioptic Code 39 (default= <b>W</b> )<br>UCC Coupon Extended Code (default= <b>Z</b> )<br>PDF417/Micro PDF417 (default= <b>V</b> )<br>Codablock F (default= <b>Y</b> )<br>Code 16K (default= <b>Q</b> )<br>Code 49 (default= <b>U</b> )<br>Korea Post Code (default= <b>a</b> )<br>QR & Micro QR Code (default= <b>b</b> )<br>Data Matrix (default= <b>c</b> )<br>Maxi Code (default= <b>d</b> ) | 00<br>01<br>02<br>03<br>04<br>05<br>06<br>07<br>08<br>09<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>20<br>21<br>22<br>23<br>24<br>25<br>26<br>28<br>29<br>30 | (1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character)<br>(1 character) |



PROGRAM

## Symbology Reading Control

### User Defined Symbol ID (continued)



F\_DEFAULT

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



F\_DEFAULT

| Family Code Selection                 | P.C | Parameter Selection             | Option Code |
|---------------------------------------|-----|---------------------------------|-------------|
| <b>Readable Symbology Setting</b><br> | SS  | Auto ▲                          | 00          |
|                                       | CS  | Popular 1D                      | C0          |
|                                       | CS  | Code 128 *                      | 01          |
|                                       | CS  | GS1-128 *                       | 31          |
|                                       | CS  | UPC-A *                         | 02          |
|                                       | CS  | UPC-E *                         | 03          |
|                                       | CS  | EAN-13 *                        | 04          |
|                                       | CS  | EAN-8 *                         | 05          |
|                                       | CS  | Codabar/NW-7 *                  | 06          |
|                                       | CS  | Code 39 *                       | 07          |
|                                       | CS  | Trioptic Code 39                | 47          |
|                                       | CS  | Standard/Industrial 2 of 5      | 08          |
|                                       | CS  | Matrix 2 of 5                   | 38          |
|                                       | CS  | Interleaved 2 of 5 *            | 48          |
|                                       | CS  | China Postal Code               | 58          |
|                                       | CS  | Germany Postal Code             | 68          |
|                                       | CS  | Code 93 *                       | 09          |
|                                       | CS  | Code 11                         | 10          |
|                                       | CS  | MSI/Plessey                     | 11          |
|                                       | CS  | UK/Plessey                      | 12          |
|                                       | CS  | Telepen                         | 13          |
|                                       | CS  | GS1 DataBar (RSS-14) *          | 14          |
|                                       | CS  | IATA                            | 15          |
|                                       | CS  | PDF417 * /Micro PDF417          | 17          |
|                                       | CS  | Codablock F                     | 18          |
|                                       | CS  | Code 16K                        | 19          |
|                                       | CS  | Code 49                         | 20          |
|                                       | CS  | Korea Post Code                 | 21          |
|                                       | CS  | QR Code * / Micro QR Code *     | A0          |
|                                       | CS  | Data Matrix *                   | A1          |
|                                       | CS  | MaxiCode                        | A2          |
|                                       | CS  | Aztec Code *                    | A3          |
|                                       | CS  | Chinese Sensible (Han Xin) Code | A4          |

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



PROGRAM

## Symbology Reading Control

### Readable Barcode Setting (continued)



F\_DEFAULT

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

- If your application is known, you may select those known symbologies only to increase the reading speed and decrease the possibility of reading error. Furthermore, to add the **"Symbology ID"** into the transmitted data is also helpful to identify the specific symbology.
- Above symbologies marketed with \* are enabled as default. When you select "Auto", the scanner only reads those symbologies marked with \*.
- "Popular 1D" includes "Code 128", "GSA-128", "UPC-A", "UPC-E", "EAN-13", "EAN-8", "Codabar/NW-7", "Code 39", "Interleaved 2 of 5", "Code 93", "GS1 DataBar (RSS-14)".
- When you set the minimum and maximum length of each symbology, please note the data length of scanned barcode doesn't include start/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><br>   | 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><br> | SS  | Disable Trioptic Code 39 ▲  | 0                 |
|                                     | SS  | Enable Trioptic Code 39   | 1                 |
| <b>Code 39 Min. Length</b><br>      | SS  | Default (01) ▲  | FIN<br>(2 digits) |
|                                     | MS  | 01-Maximum<br><br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. |                   |
| <b>Code 39 Max. Length</b><br>      | SS  | Default (98) ▲  | FIN<br>(2 digits) |
|                                     | MS  | 98-Minimum<br><br>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  
Code 39 Setting



F\_DEFAULT

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

■ Code 39 Security Level

The scanner offers four levels of decode security for Code39 barcodes:

- Level 0: If you are experiencing misread of poorly-printed or serious out-of-spec. barcodes in level 1, please select level 0.
- Level 1: If you are experiencing misread of poorly-printed or out-of-spec. barcodes in level 2, please select level 1.
- Level 2: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding “in-spec” Code39 barcodes.
- Level 3: If you failed to read poorly-printed or out-of-spec. barcodes in level 2, please select level 3. This is the most aggressive setting and may increase the misread.







PROGRAM

## Symbology Reading Control

### Codabar/NW-7 Setting



F\_DEFAULT

| Family Code Selection   | P.C      | Parameter Selection   | Option Code              |
|---|----------|---|--------------------------|
| <b>Codabar Setting</b><br>               | 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 Check Digit Settings</b><br> | SS       | Modulus 16 ▲  | 0                        |
|   | SS       | Modulus 10/weight 3   | 1                        |
|   | SS       | Modulus 11  | 2                        |
|   | SS       | Modulus 10/weight 2   | 3                        |
|   | SS       | 7 check DR  | 4                        |
|   | SS       | Weight Modulus 11   | 5                        |
|   | SS       | Runes (Modulus 10/weight 2)   | 6                        |
| <b>Codabar Min. Length</b><br>         | SS<br>MS | Default (04) ▲<br>01-Maximum<br><br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br>(2 digits) |
| <b>Codabar Max. Length</b><br>         | SS<br>MS | Default (98) ▲<br>98-Minimum<br><br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br>(2 digits) |



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><br> | SS  | Disable UPC-A                           | 0           |
|                               | SS  | Enable UPC-A ▲                          | 1           |
|                               | SS  | Disable UPC-E                           | 2           |
|                               | SS  | Enable UPC-E ▲                          | 3           |
|                               | SS  | Disable UPC-E expansion ▲               | 4           |
|                               | SS  | Enable UPC-E expansion                  | 5           |
|                               | SS  | Disable UPC standardization ▲           | 6           |
|                               | SS  | Enable UPC standardization              | 7           |
|                               | SS  | Disable UPC numeric system              | 8           |
|                               | SS  | Enable UPC numeric system ▲             | 9           |
|                               | SS  | Disable UPC-A check digit transmission  | A           |
|                               | SS  | Enable UPC-A check digit transmission ▲ | B           |
|                               | SS  | Disable UPC-E check digit transmission  | C           |
|                               | SS  | Enable UPC-E check digit transmission ▲ | D           |
|                               | SS  | Disable UPC "leading 1" portion ▲       | E           |
|                               | SS  | Enable UPC "leading 1" portion          | F           |

- When enable UPC-E expansion, the UPC-E decoded data will be converted to UPC-A format and affected by related setting, such as UPC standardization, UPC numeric system, UPC-A check digit transmission.
- **UPC-E & EAN-8 Expansion** : Expand the 8-digit UPC-E and 8-digit EAN-8 to 12-digit UPC-A and 13-digit EAN-13.
- **UPC-A Standardization** : Expand the 12-digit UPC-A to 13-digit EAN-13 with 1 zero insertion.
- **UPC Lead 1 Numeric System** :To read UPC leading with the 1 numeric system, you must enable this option.

| WPC Selection<br>(UPC/EAN/CAN) | Basic Length | Disable<br>Check Digit | Disable<br>Numeric System | With 2-digit<br>Addendum | With 5-digit<br>Addendum | Enable<br>Standardization | Enable<br>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

### UPC-A & UPC-E Setting (continued)



F\_DEFAULT

| Family Code Selection             | P.C | Parameter Selection                      | Option Code |
|-----------------------------------|-----|--|-------------|
| <b>UPC Supplement Setting</b><br> | 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           |
| <b>UPC/EAN Security Level</b><br> | SS  | Level 0                                  | 0           |
|                                   | SS  | Level 1 ▲                                | 1           |
|                                   | SS  | Level 2                                  | 2           |
|                                   |     | Only available for UPC-A & EAN-13        |             |
| <b>Supplement Scan Voting</b><br> | SS  | None                                     | 0           |
|                                   | SS  | Level 1                                  | 1           |
|                                   | SS  | Level 2                                  | 2           |
|                                   | SS  | Level 3 ▲                                | 3           |
|                                   | SS  | Level 4                                  | 4           |
|                                   | SS  | Level 5                                  | 5           |
|                                   | SS  | Level 6                                  | 6           |
|                                   | SS  | Level 7                                  | 7           |
|                                   | SS  | Level 8                                  | 8           |
|                                   | SS  | Level 9                                  | 9           |
|                                   | SS  | Level 10                                 | A           |
|                                   | SS  | Level 11                                 | B           |
|                                   | SS  | Level 12                                 | C           |
|                                   | SS  | Level 13                                 | D           |

### ▪ **UPC/EAN Security Level**

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

Level 0: If you are experiencing misread of poorly-printed or out-of-spec. barcodes, especially in characters 1, 2, 7, and 8 in level 1, please select level 0. Selection of this security level may significantly impair the decoding ability of the scanner.

Level 1: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding “in-spec” UPC/EAN barcodes.

Level 2: If you failed to read poorly-printed or out-of-spec. barcodes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.

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





PROGRAM

## Symbology Reading Control

### EAN Setting



F\_DEFAULT

| Family Code Selection             | P.C | Parameter Selection                          | Option Code |
|-----------------------------------|-----|--|-------------|
| <b>EAN Setting</b><br>            | 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><br> | 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           |
| <b>Supplement Scan Voting</b><br> | SS  | None   | 0           |
|                                   | SS  | Level 1                                      | 1           |
|                                   | SS  | Level 2                                      | 2           |
|                                   | SS  | Level 3 ▲                                    | 3           |
|                                   | SS  | Level 4                                      | 4           |
|                                   | SS  | Level 5                                      | 5           |
|                                   | SS  | Level 6                                      | 6           |
|                                   | SS  | Level 7                                      | 7           |
|                                   | SS  | Level 8                                      | 8           |
|                                   | SS  | Level 9                                      | 9           |
|                                   | SS  | Level 10                                     | A           |
|                                   | SS  | Level 11                                     | B           |
|                                   | SS  | Level 12                                     | C           |
|                                   | SS  | Level 13                                     | D           |

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



PROGRAM

## Symbology Reading Control

### EAN Setting



F\_DEFAULT

| Family Code Selection             | P.C | Parameter Selection                                     | Option Code |
|-----------------------------------|-----|---|-------------|
| <b>UPC/EAN Security Level</b><br> | SS  | Level 0   | 0           |
|                                   | SS  | Level 1 ▲   | 1           |
|                                   | SS  | Level 2   | 2           |
|                                   |     | Only available for UPC-A & EAN-13                       |             |
| <b>EAN Supplement Control</b><br> | SS  | Disable all specific prefix supplement digital output ▲ | 0           |
|                                   | SS  | Enable all specific prefix supplement digital output    | 1           |
|                                   | SS  | Enable 491 Supplement Digit Output                      | 2           |
|                                   | SS  | Enable 978/979 Supplement Digit Output                  | 3           |
|                                   | SS  | Enable 977 Supplement Digit Output                      | 4           |
|                                   | SS  | Enable 378/379 Supplement Digit Output                  | 5           |
|                                   | SS  | Enable 414/419 Supplement Digit Output                  | 6           |
|                                   | SS  | Enable 434/439 Supplement Digit Output                  | 7           |

#### ■ UPC/EAN Security Level

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

Level 0: If you are experiencing misread of poorly-printed or out-of-spec. barcodes, especially in characters 1, 2, 7, and 8 in level 1, please select level 0. Selection of this security level may significantly impair the decoding ability of the scanner.

Level 1: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding “in-spec” UPC/EAN barcodes.

Level 2: If you failed to read poorly-printed or out-of-spec. barcodes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.

#### ■ EAN Supplement Control

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

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




PROGRAM

Symbology Reading Control  
UCC Coupon Extended Code Setting



F\_DEFAULT

| Family Code Selection   | P.C      | Parameter Selection   | Option Code |
|---|----------|---|-------------|
| UCC Coupon Extended Code<br> | SS<br>SS | Disable UCC Coupon Extended Code ▲<br>Enable UCC Coupon Extended Code | 0<br>1      |

- UCC Coupon Extended Code  
When UCC coupon extended code function is enabled, scanner decodes UPC-A barcodes starting with digit “5”, EAN-13 barcodes starting with digit “99” and GS1-128 Coupon Codes. UPC-A, EAN-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><br>                | 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><br> | 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><br>            | 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><br> | SS  | Default (04) ▲  | <b>FIN</b><br><b>(2 digits)</b> |
|                                       | MS  | 01-Maximum<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. |                                 |
| <b>Code 25 Family Max. Length</b><br> | SS  | Default (98) ▲  | <b>FIN</b><br><b>(2 digits)</b> |
|                                       | MS  | 98-Minimum<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. |                                 |

- For Code25 setting, we recommend you to select **only one** type of Code 25 or set the **maximum/minimum barcode 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><br>     | SS<br>SS<br>SS<br>SS<br>SS<br>SS<br>SS | Disable Code 11 ▲<br>Enable Code 11<br>Disable check digit verification ▲<br>Select 1-check digit verification<br>Select 2-check digit verification<br>Disable check digit transmission ▲<br>Enable check digit transmission | 0<br>1<br>2<br>3<br>4<br>5<br>6 |
| <b>Code 11 Min. Length</b><br> | SS<br><b>MS</b>                        | Default (04) ▲<br>01-Maximum<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.  | <b>FIN</b><br><b>(2 digits)</b> |
| <b>Code 11 Max. Length</b><br> | SS<br><b>MS</b>                        | Default (98) ▲<br>98-Minimum<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.  | <b>FIN</b><br><b>(2 digits)</b> |
| <b>Code 93 Setting</b><br>     | SS<br>SS<br>SS<br>SS                   | Disable Code 93<br>Enable Code 93 ▲<br>Disable check digit transmission ▲<br>Enable check digit transmission   | 0<br>1<br>2<br>3                |
| <b>Code 93 Min. Length</b><br> | SS<br><b>MS</b>                        | Default (01) ▲<br>01-Maximum<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.  | <b>FIN</b><br><b>(2 digits)</b> |
| <b>Code 93 Max. Length</b><br> | SS<br><b>MS</b>                        | Default (98) ▲<br>98-Minimum<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.  | <b>FIN</b><br><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><br>     | 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><br> | SS  | Default (04) ▲  | <b>FIN</b><br><b>(2 digits)</b> |
|   | MS  | 01-Maximum<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. |                                 |
| <b>MSI/Plessey Max. Length</b><br> | SS  | Default (98) ▲  | <b>FIN</b><br><b>(2 digits)</b> |
|   | MS  | 98-Minimum<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. |                                 |





PROGRAM

## Symbology Reading Control

## Code 128 Setting



F\_DEFAULT

| Family Code Selection              | P.C | Parameter Selection   | Option Code                     |
|------------------------------------|-----|---|---------------------------------|
| <b>Code 128 Setting</b><br>        | SS  | Disable Code 128  | 0                               |
|                                    | SS  | Enable Code 128 ▲   | 1                               |
|                                    | SS  | ISBT Concatenation Off ▲  | 2                               |
|                                    | SS  | ISBT Concatenation On   | 3                               |
|                                    | SS  | ISBT Concatenation On – Check ISBT table  | 4                               |
|                                    | SS  | ISBT Concatenation Auto   | 5                               |
| <b>Code 128 Min. Length</b><br>    | SS  | Default (01) ▲  | <b>FIN</b><br><b>(2 digits)</b> |
|                                    | MS  | 01-Maximum<br><br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. |                                 |
| <b>Code 128 Max. Length</b><br>    | SS  | Default (98) ▲  | <b>FIN</b><br><b>(2 digits)</b> |
|                                    | MS  | 98-Minimum<br><br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. |                                 |
| <b>Code 128 Security Level</b><br> | SS  | Level 0   | 0                               |
|                                    | SS  | Level 1 ▲   | 1                               |

▪ **Code 128 Setting**

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

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

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

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

▪ **Code 128 Security Level**

The scanner offers two levels of decode security for Code128 barcodes:

Level 0: If you are experiencing misread of poor-printed or out-of-spec. barcode in level1, please select level 0.

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



PROGRAM

## Symbology Reading Control

### GS1-128 Setting



F\_DEFAULT

| Family Code Selection          | P.C             | Parameter Selection   | Option Code                     |
|--------------------------------|-----------------|---|---------------------------------|
| <b>GS1-128 Setting</b><br>     | SS<br>SS        | Disable GS1-128<br>Enable GS1-128 ▲   | 0<br>1                          |
| <b>GS1-128 Min. Length</b><br> | SS<br><b>MS</b> | Default (01) ▲<br>01-Maximum<br><br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br><b>(2 digits)</b> |
| <b>GS1-128 Max. Length</b><br> | SS<br><b>MS</b> | Default (98) ▲<br>98-Minimum<br><br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br><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><br>     | 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><br> | SS  | Default (04) ▲  | <b>FIN</b><br><b>(2 digits)</b> |
|                                   | MS  | 01-Maximum<br>Scan 2 digits from the option code chart in Appendix, and then FuzzyScan will terminate this selection automatically. |                                 |
| <b>UK/Plessey Max. Length</b><br> | SS  | Default (98) ▲  | <b>FIN</b><br><b>(2 digits)</b> |
|                                   | MS  | 98-Minimum<br>Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.     |                                 |






PROGRAM

## Symbology Reading Control Telepen Setting



F\_DEFAULT

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



PROGRAM

## Symbology Reading Control

### GS1 DataBar Setting



F\_DEFAULT

| Family Code Selection                         | P.C | Parameter Selection   | Option Code              |
|---|-----|---|--------------------------|
| <b>GS1 DataBar Setting</b><br>                | 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  | DisableGS1 DataBar Expanded   | 4                        |
|   | SS  | EnableGS1 DataBar Expanded ▲  | 5                        |
| <b>GS1 DataBar Limited Security Level</b><br> | SS  | Level 1   | 0                        |
|   | SS  | Level 2   | 1                        |
|   | SS  | Level 3 ▲   | 2                        |
|   |     | Only available for GS1 DataBar Limited<br>Only available for F460, F560 scanners.   |                          |
| <b>GS1 DataBar Min. Length</b><br>            | SS  | Default (04) ▲  | <b>FIN</b><br>(2 digits) |
|   | MS  | 01-Maximum<br><br>Only available for GS1 DataBar <b>Expanded</b><br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. |                          |
| <b>GS1 DataBar Max. Length</b><br>            | SS  | Default (74) ▲  | <b>FIN</b><br>(2 digits) |
|   | MS  | 74-Minimum<br><br>Only available for GS1 DataBar <b>Expanded</b> . Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.  |                          |

#### ■ GS1 128 Limited Security Level

The scanner F460/F560 offers three levels of decode security for GS1 DataBar Limited barcodes:

Level 1: If you failed to read poorly-printed or out-of-spec. barcodes in level 2, please select level1. This is the most aggressive setting and may increase the misread.

Level 2: If you are experiencing misread of poor-printed or out-of-spec. barcode in level 3, please select level 2.

Level 3: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding "in-spec." GS1 128 Limited barcodes.



PROGRAM

## Symbology Reading Control

### Composite Codes, Codablock F, PDF417/MicroPDF417 Setting



F\_DEFAULT

| Family Code Selection                 | P.C                  | Parameter Selection   | Option Code      |
|---------------------------------------|----------------------|---|------------------|
| <b>Composite Codes Setting</b><br>    | SS<br>SS<br>SS<br>SS | Disable composite codes ▲<br>Enable composite codes<br>UPC Composite Mode: UPC never linked ▲<br>UPC Composite Mode: UPC always linked<br><br>If UPC Composite Mode: UPC never linked is selected, UPC barcodes are transmitted whether MicroPDF417 symbol is detected or not.<br><br>If UPC Composite Mode: UPC always linked is selected, UPC barcodes are only transmitted when the MicroPDF417 is detected. | 0<br>1<br>2<br>3 |
| <b>Codablock F Setting</b><br>        | SS<br>SS             | Disable ▲<br>Enable   | 0<br>1           |
| <b>PDF417/MicroPDF417 Setting</b><br> | SS<br>SS<br>SS<br>SS | Disable PDF417<br>Enable PDF417 ▲<br>Disable MicroPDF417 ▲<br>Enable MicroPDF417  | 0<br>1<br>2<br>3 |



PROGRAM

## Symbology Reading Control Code 16K & Code 49 Setting



F\_DEFAULT

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



PROGRAM

## Symbology Reading Control

### QR Code Setting



F\_DEFAULT

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

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





PROGRAM

## Symbology Reading Control

### Data Matrix Setting



F\_DEFAULT

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

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






PROGRAM

## Symbology Reading Control MaxiCode Setting



F\_DEFAULT

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






PROGRAM

## Symbology Reading Control

### Aztec Code Setting



F\_DEFAULT

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



PROGRAM

## Symbology Reading Control

### Australian Post, US Planet, US Postnet, British Post,& Japan Post Setting



F\_DEFAULT

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

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



PROGRAM

## Symbology Reading Control

### Netherlands KIX Code, Intelligent Mail,& Korea Post Code Setting



F\_DEFAULT

| Family Code Selection                                       | P.C      | Parameter Selection   | Option Code |
|---|----------|---|-------------|
| <b>Netherlands KIX Code Setting</b><br>                     | SS<br>SS | Disable Netherlands KIX Code ▲<br>Enable Netherlands KIX Code | 0<br>1      |
| <b>Intelligent Mail Setting<br/>(USPS 4CB/One Code)</b><br> | SS<br>SS | Disable Intelligent Mail ▲<br>Enable Intelligent Mail         | 0<br>1      |
| <b>Korea Post Code Setting</b><br>                          | SS<br>SS | Disable ▲<br>Enable<br>Length fixed in 6 characters.          | 0<br>1      |



PROGRAM

## Keyboard Interface Control

### Keyboard Layout (Language) Setting



F\_DEFAULT

| Family Code Selection      | P.C | Parameter Selection          | Option Code |
|----------------------------|-----|------------------------------|-------------|
| <b>Keyboard Layout</b><br> | SS  | USA (QWERTY) ▲               | 00          |
|                            | SS  | France (AZERTY)              | 01          |
|                            | SS  | Germany (QWERTZ)             | 02          |
|                            | SS  | United Kingdom - UK (QWERTY) | 03          |
|                            | SS  | Canadian French (QWERTY)     | 04          |
|                            | SS  | Spain (Spanish, QWERTY)      | 05          |
|                            | SS  | Sweden/Finland (QWERTY)      | 06          |
|                            | SS  | Portugal (QWERTY)            | 07          |
|                            | SS  | Norway (QWERTY)              | 08          |
|                            | SS  | Spain(Latin America, QWERTY) | 09          |
|                            | SS  | Italy (QWERTY)               | 10          |
|                            | SS  | Netherlands (QWERTY)         | 11          |
|                            | SS  | Denmark (QWERTY)             | 12          |
|                            | SS  | Belgium (AZERTY)             | 13          |
|                            | SS  | Switzerland-Germany (QWERTZ) | 14          |
|                            | SS  | Iceland (QWERTY)             | 15          |
|                            | SS  | Japan (DOS/V)                | 16          |
|                            | SS  | Czech (QWERTY)               | 17          |
|                            | SS  | Universal                    | 99          |

Please refer to the **ASCII/HEX Table** listed in the Appendix to determine HEX codes for characters, symbols, and functions to be used as preamble or postamble. To set preamble or postamble as function key output, you must enable the “**Function Key Emulation**” feature as listed in page 47 first

- When Universal Keyboard is selected, ASCII and Extended ASCII characters are sent as sequence of alt key plus numeric keypad value. This is only valid for Windows OS.

▪ **Keyboard Interface Message String :**

| Preamble        | Data Length | Prefix Symbol ID  | Scanned Data    | Suffix Symbol ID  | Postamble       | Record Suffix |
|-----------------|-------------|-------------------|-----------------|-------------------|-----------------|---------------|
| 1-15 characters | 2-4 digits  | 1 or 3 characters | Variable length | 1 or 3 characters | 1-15 characters | 1 character   |



PROGRAM

## Keyboard Interface Control

### Record Suffix, Preamble, Postamble, FNC1 Symbol Character Transmission



F\_DEFAULT

| Family Code Selection                 | P.C   | Parameter Selection | Option Code                         |
|---------------------------------------|---|---------------------|-------------------------------------|
| <b>Record Suffix</b><br>              | SS None<br>SS RETURN ▲<br>SS TAB<br>SS SPACE<br>SS ENTER (Numeric Key Pad)<br>SS User defined character (1 character) |                     | 0<br>1<br>2<br>3<br>4<br>5, (00-7F) |
| <b>Preamble</b><br>                   | SS None ▲<br>MS 1-15 characters<br>Maximum 15-character input; scan "FIN" to terminate this selection.                |                     | <b>FIN</b><br>[00-7F], [FIN]        |
| <b>Postamble</b><br>                  | SS None ▲<br>MS 1-15 characters<br>Maximum 15-character input; scan "FIN" to terminate this selection.                |                     | <b>FIN</b><br>[00-7F], [FIN]        |
| <b>FNC1 Symbol Char. Transmit</b><br> | SS Disable<br>SS Enable ▲   |                     | 0<br>1                              |

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



PROGRAM

## Keyboard Interface Control

### Caps Lock & Caps Lock Release Control



F\_DEFAULT

| Family Code Selection                | P.C            | Parameter Selection  | Option Code |
|--------------------------------------|----------------|--|-------------|
| <b>Caps Lock Control</b><br>         | SS<br>SS<br>SS | "Caps Lock Off" State ▲<br>"Caps Lock On" State<br>Auto Detect (PC/AT, PS/2, Keyboard Replacement and DOS/V Machines only) | 0<br>1<br>2 |
| <b>Caps Lock Release Control</b><br> | SS<br>SS       | "Caps Lock On, Caps Off" ▲<br>"Caps Lock On, Shift Off"  | 0<br>1      |

- The function of "**Caps Lock Control**" is **only** available for IBM PC/AT, PS/VP, PS/2 series personal computers and compatible machines. While selecting the other host interfaces, these selections don't perform the above functions for you.
- Please check the **actual** Caps Lock state in use while software application is running. If the Caps Lock state is off, select "**Caps Lock Off**" state, and 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><br>   | SS<br>MS | None ▲<br>1-99 (x5) msec.<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br><b>(2 digits)</b> |
| <b>Intercharacter Delay</b><br> | SS<br>MS | None ▲<br>1-99 (x5) msec.<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br><b>(2 digits)</b> |
| <b>Interfunction Delay</b><br>  | SS<br>MS | None ▲<br>1-99 (x5) msec.<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br><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 of transmission of segments in each message string.



PROGRAM

## Keyboard Interface Control

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



F\_DEFAULT

| Family Code Selection             | P.C                        | Parameter Selection   | Option Code           |
|-----------------------------------|----------------------------|---|-----------------------|
| <b>Function Key Emulation</b><br> | SS<br>SS<br>SS             | Enable Keyboard Function Code Table 1 Output ▲<br>Enable Keyboard Function Code Table 2 Output (Ctrl-Output)<br>Enable Keyboard Function Code Table 3 Output<br><br>Refer to Appendix – Keyboard Function Code Table for details.<br>Keyboard Function Code <b>Table 3</b> is only supported by <i>A Series &amp; PA Series</i> . | 0<br>1<br>2           |
| <b>Key Pad Emulation</b><br>      | SS<br>SS                   | Disable key pad emulation ▲<br>Enable numeric output as key pad (Num Lock On) output  | 0<br>1                |
| <b>Upper/Lower Case</b><br>       | SS<br>SS<br>SS<br>SS       | Normal case (neglect the upper/lower case control) ▲<br>Inverse case (change all characters output to inverse case)<br>Upper case (force all characters output as upper case)<br>Lower case (force all characters output as lower case)   | 0<br>1<br>2<br>3      |
| <b>Dollar Sign Control</b><br>    | SS<br>SS<br>SS<br>SS<br>SS | Dollar sign output as "\$" ▲<br>Dollar sign output as "¥"<br>Dollar sign output as "€"<br>Dollar sign output as "£"<br>Dollar sign output as "¢"  | 0<br>1<br>2<br>3<br>4 |

- The function of “**Key Pad Emulation**” is **only** available for IBM PC/AT, PS/VP, PS/2 series personal computers and compatible machines. While selecting the other host interfaces, these selections don't perform the above functions for you.




PROGRAM

## Keyboard Interface Control

### Code Page: Barcode Encoding Format



F\_DEFAULT

| Family Code Selection  | P.C | Parameter Selection                   | Option Code |
|--|-----|---------------------------------------|-------------|
| Barcode Encoding Format<br> | MS  | UTF8                                  | 00          |
|  |     | Codepage 950                          | 10          |
|  |     | Codepage 949                          | 11          |
|  |     | Codepage 936                          | 12          |
|  |     | Codepage 932                          | 13          |
|  |     | Codepage 874                          | 14          |
|  |     | WIN1250                               | 15          |
|  |     | WIN1251                               | 16          |
|  |     | WIN1252 ▲                             | 17          |
|  |     | WIN1253                               | 18          |
|  |     | WIN1254                               | 19          |
|  |     | WIN1255                               | 1a          |
|  |     | WIN1256                               | 1b          |
|  |     | WIN1257                               | 1c          |
|  |     | WIN1258                               | 1d          |
|  |     | ISO 8859-1 Latin 1, Western European  | 1e          |
|  |     | ISO 8859-2 Latin 2, Central European  | 1f          |
|  |     | ISO 8859-3 Latin 3, Southern European | 20          |
|  |     | ISO 8859-4 Latin 4, Northern European | 21          |
|  |     | ISO 8859-5 Cyrillic                   | 22          |
|  |     | ISO 8859-6 Arabic                     | 23          |
|  |     | ISO 8859-7 Greek                      | 24          |
|  |     | ISO 8859-8 Hebrew                     | 25          |
|  |     | ISO 8859-9 Latin 5, Turkish           | 26          |
|  |     | ISO 8859-10 Latin 6, Nordic           | 27          |
|  |     | ISO 8859-11 Thai                      | 28          |
|  |     | ISO 8859-13 Latin 7, Baltic           | 29          |

|  |  |    |
|--|--|----|
|  | ISO 8859-14 Latin 8, Celtic                  | 2a |
|  | ISO 8859-15 Latin 9                          | 2b |
|  | ISO 8859-16 Latin 10, South-Eastern European | 2c |

- **Corresponding Languages:** Please see Appendix below, “Code Page - Table of Corresponding Languages”.
- **Barcode Encoding Format:** 2D barcodes can be encoded using different code pages. To properly decode the data of a 2D barcode, the scanner must first be set to the corresponding code page of such data. Select UTF8 if the 2D barcode was encoded in Unicode (UTF-8).



PROGRAM

## Keyboard Interface Control

### Code Page: Keyboard Output



F\_DEFAULT

| Family Code Selection      | P.C | Parameter Selection   | Option Code  |
|----------------------------|-----|---|--|
| <b>Keyboard Output</b><br> | MS  | Linux Unicode Output<br>MAC Unicode Output<br>WIN Notepad Unicode Output<br>WIN WordPad Unicode Output<br>Codepage 950 Output<br>Codepage 949 Output<br>Codepage 936 Output<br>Codepage 932 Output<br>Codepage 874 Output<br>WIN1250 Output<br>WIN1251 Output<br>WIN1252 Output ▲<br>WIN1253 Output<br>WIN1254 Output<br>Codepage 852 Output<br>Codepage 855 Output<br>Codepage 866 Output<br>Codepage 850 Output<br>Codepage 437 Output<br>Codepage 737 Output<br>Codepage 857 Output<br>Codepage 862 Output<br>Codepage 720 Output<br>Codepage 775 Output | 00<br>01<br>02<br>03<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>30<br>31<br>32<br>33<br>34<br>35<br>36<br>37<br>38<br>39 |

|  |  |                |    |
|--|--|----------------|----|
|  |  | WIN1255 Output | 1a |
|  |  | WIN1256 Output | 1b |
|  |  | WIN1257 Output | 1c |
|  |  | WIN1258 Output | 1d |

▪ **Keyboard Output:** Different languages use different code pages. For your scanner to properly display the content of a2D barcode, select the codepage that corresponds to the content's language. Please check your system locale setting in Windows and make sure that it also matches this language.

- 1) Mac Device Output: If your host is a Mac device, select "MAC Unicode Output" as the scanner's output setting (the data will be in Unicode). You must also first ensure that your Mac device has the required Unicode Hex Input Setup and is configured for the 16-bit input method. Please see Appendix below, "Code Page - Unicode Hex Input Setup".
- 2) WIN Notepad Unicode Output: If your host is a Windows device, you can output the data in Unicode format to Notepad. You must first ensure that your Windows device has the required Unicode Hex Input Setup, and is set to the US English input method. Please see Appendix below, "Code Page - Unicode Hex Input Setup".
- 3) WIN WordPad Unicode Output: If your host is a Windows device, you can output the data in Unicode format to WordPad. You must first ensure that your Windows device is set to the US English input method.



PROGRAM

## Serial Interface Control

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

F\_DEFAULT

| Family Code Selection                 | P.C                              | Parameter Selection  | Option Code                  |
|---------------------------------------|----------------------------------|--|------------------------------|
| <b>STX/ETX Control</b><br>            | SS<br>SS                         | Disable STX/ETX transmission ▲<br>Enable STX/ETX transmission<br>STX/ETX are two characters used to indicate the starting and ending of the total data frame transmitted via serial interface.   | 0<br>1                       |
| <b>Record Suffix</b><br>              | SS<br>SS<br>SS<br>SS<br>SS<br>SS | None<br>CR (0DH) ▲<br>LF (0AH)<br>CRLF (0D0AH)<br>TAB (09H)<br>SPACE (20H)   | 0<br>1<br>2<br>3<br>4<br>5   |
| <b>Preamble</b><br>                   | SS<br>MS                         | None ▲<br>1-15 characters<br>Maximum 15-character input; scan "FIN" to terminate this selection.   | <b>FIN</b><br>[00-7F], [FIN] |
| <b>Postamble</b><br>                  | SS<br>MS                         | None ▲<br>1-15 characters<br>Maximum 15-character input; scan "FIN" to terminate this selection.   | <b>FIN</b><br>[00-7F], [FIN] |
| <b>FNC1 Symbol Char. Transmit</b><br> | SS<br>SS                         | Disable<br>Enable ▲<br>When this function is enabled and the FNC1 is contained in scanned data, the scanner transmits the FNC1 to the host. Chart of the FNC1 is provided in Appendix–Keyboard Function Code Table. When the scanner interface is set to keyboard, the scan code is converted to corresponding key function before it is transmitted | 0<br>1                       |

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

| STX         | Preamble        | Data Length | Prefix Symbol ID  | Scanned Data    | Suffix Symbol ID  | Postamble       | ETX         | Record Suffix |
|-------------|-----------------|-------------|-------------------|-----------------|-------------------|-----------------|-------------|---------------|
| 1 character | 1-15 characters | 2-4 digits  | 1 or 3 characters | Variable length | 1 or 3 characters | 1-15 characters | 1 character | 1 character   |



PROGRAM

## Serial Interface Control Delay Setting



F\_DEFAULT

| Family Code Selection           | P.C      | Parameter Selection  | Option Code                     |
|---------------------------------|----------|--|---------------------------------|
| <b>Intermessage Delay</b><br>   | SS<br>MS | None ▲<br>1-99 (x5) msec.<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br><b>(2 digits)</b> |
| <b>Intercharacter Delay</b><br> | SS<br>MS | None ▲<br>1-99 (x5) msec.<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br><b>(2 digits)</b> |
| <b>Interfunction Delay</b><br>  | SS<br>MS | None ▲<br>1-99 (x5) msec.<br>Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically. | <b>FIN</b><br><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 transmission and reception of each segment of the message string.





PROGRAM

## Serial Interface Control Protocol, ACK/NAK Setting



F\_DEFAULT

| Family Code Selection           | P.C                  | Parameter Selection   | Option Code                     |
|---------------------------------|----------------------|---|---------------------------------|
| <b>Handshaking Protocol</b><br> | SS<br>SS<br>SS<br>SS | None (free running mode) ▲<br>RTS/CTS (hardware handshaking)<br>ACK/NAK (software handshaking)<br>Xon/Xoff (software handshaking) | 0<br>1<br>2<br>3                |
| <b>NAK Retry Count</b><br>      | SS<br>SS             | 3 times ▲<br>0~255 times  | <b>FIN</b><br><b>(3 digits)</b> |
| <b>ACK Indication</b><br>       | SS<br>SS<br>SS<br>SS | Disable ACK Time-out Indication<br>Enable ACK Time-out Indication ▲<br>Disable ACK Indication ▲<br>Enable ACK Indication          | 0<br>1<br>2<br>3                |

- USB COM doesn't support RTS/CTS handshaking protocol.
- When the **ACK/NAK Software Handshaking** option is selected, the FuzzyScan waits for an **ACK** (acknowledge) or **NAK** (not acknowledge) from the host computer after each data transmission. If the NAK is received, FuzzyScan will re-send the data until receiving ACK.'
- **NAK Retry Count**  
 After transmitting data, the scanner expects a NAK response from the host up to the preset "Serial Response Time-out". If the scanner doesn't get a response, the scanner will issue an error indication and discard the data. When a NAK is received, the scanner transmits the same data again and waits for either an ACK or NAK. The scanner issues an error indication and discards the data under following two conditions:
  - 1) After preset NAK retry counts is received within the preset serial response time-out.
  - 2) If the preset time-out is up but the preset NAK retry counts haven't come to the end.
 The default retry counts are three times. If you program "0 time", the scanner won't resend the data to the host when the scanner receives a NAK. The scanner will discard the data. If you program "255 times", the scanner can receive unlimited NAKs from the host within the pre-set serial response time-out.  
 This function is not available for batch mode. When you enable this function in on-line mode, the out-of-range function will be disable automatically.
- **ACK Indication:**  
 Disable: There's neither LED nor beeping indication for this setting.  
 Enable: There's a specific LED and beeping indication for this setting.



PROGRAM

## Serial Interface Control Response Time-out Setting, Baud Rate, Data Frame



F\_DEFAULT

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

- 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.
- 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


## Serial Interface Control

### Code Page: Barcode Encoding Format, Serial Port Output



F\_DEFAULT

| Family Code Selection  | P.C | Parameter Selection                   | Option Code |
|--|-----|---------------------------------------|-------------|
| Barcode Encoding Format<br> |     | UTF8                                  | 00          |
|  |     | Code page 950                         | 10          |
|  |     | Code page 949                         | 11          |
|  |     | Code page 936                         | 12          |
|  |     | Code page 932                         | 13          |
|  |     | Code page 874                         | 14          |
|  |     | WIN1250                               | 15          |
|  |     | WIN1251                               | 16          |
|  |     | WIN1252 ▲                             | 17          |
|  |     | WIN1253                               | 18          |
|  |     | WIN1254                               | 19          |
|  |     | WIN1255                               | 1a          |
|  |     | WIN1256                               | 1b          |
|  |     | WIN1257                               | 1c          |
|  |     | WIN1258                               | 1d          |
|  | MS  | ISO 8859-1 Latin 1, Western European  | 1e          |
|  |     | ISO 8859-2 Latin 2, Central European  | 1f          |
|  |     | ISO 8859-3 Latin 3, Southern European | 20          |
|  |     | ISO 8859-4 Latin 4, Northern European | 21          |
|  |     | ISO 8859-5 Cyrillic                   | 22          |
|  |     | ISO 8859-6 Arabic                     | 23          |
|  |     | ISO 8859-7 Greek                      | 24          |
|  |     | ISO 8859-8 Hebrew                     | 25          |
|  |     | ISO 8859-9 Latin 5, Turkish           | 26          |
|  |     | ISO 8859-10 Latin 6, Nordic           | 27          |
|  |     | ISO 8859-11 Thai                      | 28          |
|  |     | ISO 8859-13 Latin 7, Baltic           | 29          |
|  |     | ISO 8859-14 Latin 8, Celtic           | 2a          |
|  |     | ISO 8859-15 Latin 9                   | 2b          |

|  |           | ISO 8859-16 Latin 10, South-Eastern European | 2c |
|--|-----------|--|----|
| <b>Serial Port Output</b><br> | <b>MS</b> | Raw Data ▲                                   | 00 |
|  |           | Unicode (Big Endian)                         | 01 |
|  |           | Unicode (Little Endian)                      | 02 |
|  |           | UTF8   | 03 |
|  |           | CP950 Output (Big Endian)                    | 10 |
|  |           | CP949 Output (Big Endian)                    | 11 |
|  |           | CP936 Output (Big Endian)                    | 12 |
|  |           | CP932 Output (Big Endian)                    | 13 |
|  |           | CP874 Output                                 | 14 |
|  |           | WIN1250 Output                               | 15 |
|  |           | WIN1251 Output                               | 16 |
|  |           | WIN1252 Output                               | 17 |
|  |           | WIN1253 Output                               | 18 |
|  |           | WIN1254 Output                               | 19 |
|  |           | WIN1255 Output                               | 1A |
|  |           | WIN1256 Output                               | 1B |
|  |           | WIN1257 Output                               | 1C |
|  |           | WIN1258 Output                               | 1D |
|  |           | CP852  | 30 |
|  |           | CP855  | 31 |
|  |           | CP866  | 32 |
|  |           | CP850  | 33 |
|  |           | CP437  | 34 |
|  |           | CP737  | 35 |
|  |           | CP857  | 36 |
|  |           | CP862  | 37 |
|  |           | CP720  | 38 |
|  |           | CP775  | 39 |
|  |           | CP950 Output (Little Endian)                 | 90 |
|  |           | CP949 Output (Little Endian)                 | 91 |
|  |           | CP936 Output (Little Endian)                 | 92 |
|  |           | CP932 Output (Little Endian)                 | 93 |

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



PROGRAM

## Operation Control

### Operation Mode



F\_DEFAULT

| Family Code Selection     | P.C                  | Parameter Selection   | Option Code      |
|---------------------------|----------------------|---|------------------|
| <b>Operation Mode</b><br> | SS<br>SS<br>SS<br>SS | Trigger mode<br>Presentation mode ▲<br>Force mode<br>Multiple Read mode | 1<br>2<br>9<br>C |

- **Trigger Mode (External Triggering):** The scanner begins its scan session upon a pressed trigger button or receiving a Trigger On serial command. The light source of the scanner keeps on before scanning the barcode. The scan session ends if the scanner successfully decodes a barcode (Good Read), when its trigger button is released, or when a preset **Handheld Scan Time-out** duration is up. After the scan session ends, the scanner goes into standby state waiting for next scan session.
- **Presentation Mode (Auto Detection):** Under this mode, the scanner keeps its background lighting on and continuously looks for any object approaching in (motion detect state). Once it detects a approaching object, the scanner begins its scan session with its light source fully on. The scan session continues until the scanner successfully decodes a barcode (Good Read) or a preset **Presentation Scan Time-out** is up. If the session is over because of a successful scan, it re-starts next scan session immediately. If the session is over because time-out duration is up, it changes back to motion detect state and looks for next object approaching in. You can disable **Image Sensing Background Lighting** if necessary. However, if the ambient light condition in the room is not good enough, the Presentation Mode may not work properly. You can also choose different level of sensibility to meet your application (Please refer to the setting of "**Image Sensing Sensitivity**").
- **Force Mode (Continued Power On):** The scanner always turns on its light source for continuous operation without triggering. This mode is convenient for high speed barcode reading.
- **Multiple Read Mode:** The scanner begins its scan session upon a pressed trigger button or receiving a Trigger On serial command. The light source of the scanner keeps on before scanning the barcode. The scan session ends if the scanner successfully decodes a barcode (have a Good Read), when its trigger button is released, or when a preset **Handheld Scan Time-out** duration is up. Once it has a good read, the scanner will emit a beep sound, start a new scan session, and reset the time-out immediately. If the scan session ends because the time-out duration is up or the trigger is released, the scanner will goes into standby state waiting for next scan session. Multiple read mode allows the scanner to decode multiple barcodes with a single press of the trigger. When you press and hold the trigger to aim at a series of barcodes, the scanner decodes each barcode and beep for each good read. For more precise barcode decoding, you are recommended to enable **Center Alignment** function while multiple read mode is selected. You can also enable **Unique Barcode Reporting** function to avoid reading the same code multiple times in a same scanning session.
- Operation modes categorized as "Handheld Mode": Trigger mode and Multiple read mode
- Operation modes categorized as "Hands-free Mode": Presentation mode and Force mode..



PROGRAM

## Operation Control

### Illumination Control, Object Detection Control



F\_DEFAULT

| Family Code Selection               | P.C | Parameter Selection                                  | Option Code |
|-------------------------------------|-----|--|-------------|
| <b>Illumination Control</b><br>     | SS  | Disable  | 0           |
|                                     | SS  | Enable ▲   | 1           |
| <b>Object Detection Control</b><br> | SS  | Image sensing; enable "Decode after Good Read"       | 0           |
|                                     | SS  | Image sensing; disable "Decode after Good Read"      | 1           |
|                                     | SS  | Proximity sensing; enable "Decode after Good Read" ▲ | 2           |
|                                     | SS  | Proximity sensing; disable "Decode after Good Read"  | 3           |

- The **Illumination Control** is only available for Trigger mode and Multiple read mode. With it enabled, the illumination LED lights up when user presses the trigger, and vice versa.
- Under Presentation Mode, use **Object Detection Control** to choose between Image Sensor and Proximity Sensor to detect approaching object. Proximity Sensing provides a more responsive and accurate detection, while Image Sensing provides a longer detection range with wider angle of view. Image Sensing relies on background or ambient lighting to illuminate the target barcode, you can use **Image Sensing Background Lighting** to turn on or turn off background lighting according to ambient lighting condition.
  - **Image Sensing; enable "Decode after Good Read"**: The scanner uses Image Sensing as the method of object detection. When the scanner finds a barcode and decodes it successfully (have a Good Read), it restarts a new scan session no matter the Image Sensor finds any object approaching in or not.
  - **Image Sensing; disable "Decode after Good Read"**: The scanner uses Image Sensing as the method of object detection. When the scanner finds a barcode and decodes it successfully (have a Good Read), it returns to standby mode and will only starts next scan session when the image sensor detects an object approaching in.
  - **Proximity Sensing; enable "Decode after Good Read"**: The scanner uses Proximity Sensing as the method of object detection. When the scanner finds a barcode and decodes it successfully (have a Good Read), it restarts a new scan session no matter the Proximity Sensor still detects any object within its detection range or not.
  - **Proximity Sensing; disable "Decode after Good Read"**: The scanner uses Proximity Sensing as the method of object detection. When the scanner finds a barcode and decodes it successfully (have a Good Read), it only restarts a new scan session when it detects a new object entering its detection range after the original one leaving the range.



PROGRAM

## Operation Control

### Background Lighting, Image Sensing Sensitivity



F\_DEFAULT

| Family Code Selection                | P.C                                    | Parameter Selection   | Option Code                     |
|--------------------------------------|--|---|---------------------------------|
| <b>Background Lighting</b><br>       | SS<br>SS                               | LEDs Off ▲<br>LEDs On   | 0<br>1                          |
| <b>Image Sensing Sensitivity</b><br> | SS<br>SS<br>SS<br>SS<br>SS<br>SS<br>SS | Level 1<br>Level 2<br>Level 3<br>Level 4<br>Level 5 ▲<br>Level 6<br>Level 7 | 0<br>1<br>2<br>3<br>4<br>5<br>6 |

- **Background Lighting:** Under presentation mode, you can enable or disable background lighting of the scanner according to the ambient light condition. Be aware that when the ambient light is dim or dark, object detection of the scanner with image sensing may not work properly if you turn off background lighting of the scanner.
- **Image Sensing Sensitivity** is used to configure the sensitivity level of object detection under presentation mode with image sensing. The higher the level is, the longer the effective detecting range of the scanner provides.



PROGRAM

## Operation Control

### Aiming Control, Pre-decode Aiming Timer, and Decode Aiming Control



F\_DEFAULT

| Family Code Selection              | P.C | Parameter Selection          | Option Code |
|------------------------------------|-----|------------------------------|-------------|
| <b>Aiming Control</b><br>          | SS  | Regular Aiming               | 0           |
|                                    | SS  | Intelligent Aiming ▲         | 1           |
|                                    | SS  | Pre-decode Aiming            | 2           |
| <b>Pre-decode Aiming Timer</b><br> | SS  | 200 ms                       | 0           |
|                                    | SS  | 400 ms ▲                     | 1           |
|                                    | SS  | 800 ms                       | 2           |
|                                    | SS  | 1 sec                        | 3           |
|                                    | SS  | 1.5 sec.                     | 4           |
|                                    | SS  | 2 sec.                       | 5           |
|                                    | SS  | 3 sec.                       | 6           |
|                                    | SS  | 4 sec.                       | 7           |
| <b>Decode Aiming Control</b><br>   | SS  | Disable in Handheld mode     | 0           |
|                                    | SS  | Enable in Handheld mode ▲    | 1           |
|                                    | SS  | Disable in Hands-free mode ▲ | 2           |
|                                    | SS  | Enable in Hands-free mode    | 3           |

- The **Aiming Control** is available for Trigger mode and Multiple Read Mode.
  - Under **Regular Aiming**, the aiming light is turned on only when the trigger button is pressed.
  - Under **Intelligent Aiming**, the aiming light is turned on when the scanner is lifted or detects incoming object. A trigger button press activates decoding process. After 2 seconds of inactivity, the aiming light will be shut off automatically.
  - **Pre-decode Aiming** provides a time duration for the user to aim the target barcode before the scanner starts to decode. When the user presses and holds the trigger button, the aiming light will be on but the main light source won't until the timer runs out. When the timer runs out, the scanner will turn on its main light source and start to find a barcode to decode. The time duration between the pressed trigger and the start of the scan session can be adjusted by setting **Pre-Decode Aiming**. The Pre-decode Aiming can help the user to avoid a misreading if the user needs to read a specific barcode when there are other barcodes within close range.
- The **Pre-decode Aiming Timer** is only effective under Trigger Mode and Multiple Read Mode.
- Use **Decode Aiming Control** to turn on or turn off the aiming light during the scan session:
  - Under Handheld mode, enable/disable Decode Aiming Control to turn on/off the aiming light when the trigger is pressed.
  - Under Hands-free mode, enable/disable Decode Aiming Control to turn on/off the aiming light when the scanner detects an object and starts a scan session.





PROGRAM

## Operation Control

## Center Alignment, Unique Barcode Reporting



F\_DEFAULT

| Family Code Selection               | P.C | Parameter Selection           | Option Code |
|-------------------------------------|-----|-------------------------------|-------------|
| <b>Center Alignment</b><br>         | SS  | Disable in Handheld Mode      | 0           |
|                                     | SS  | Enable in Handheld Mode ▲     | 1           |
|                                     | SS  | Disable in Hands-frees Mode ▲ | 2           |
|                                     | SS  | Enable in Hands-free Mode     | 3           |
| <b>Unique Barcode Reporting</b><br> | SS  | Disable ▲                     | 0           |
|                                     | SS  | Enable                        | 1           |

- **Center Alignment:** When this function is enabled, the scanner only decodes barcode(s) around its aiming dot.
- **Unique Barcode Reporting:** This function is only effective under Multiple Read Mode. When this function is enabled, the scanner will only output data from each distinct barcode once during a scanning cycle (the time duration when the trigger button is pressed and held without release). This prevents the output of repeat data in case a barcode is accidentally read multiple times during the same scanning cycle.




PROGRAM

## Operation Control Smart Scene



F\_DEFAULT

| Family Code Selection   | P.C | Parameter Selection | Option Code |
|---|-----|---------------------|-------------|
| <b>Smart Scene</b><br> | SS  | Scene 1 ▲           | 0           |
|   | SS  | Scene 2             | 1           |
|   | SS  | Scene 3             | 2           |
|   | SS  | Scene 4             | 3           |
|   | SS  | Scene 5             | 4           |
|   | SS  | Scene 6             | 5           |
|   | SS  | Scene 7             | 6           |

- **Smart Scene** optimizes the scanner's motion tolerance, scanning speed and scanning sensitivity in different environments.
  - **Scene 1:** This is the default setting. It optimizes the scanner's motion tolerance, scanning speed and scanning sensitivity in most working environments.
  - **Scene 2:** The scanner is optimized for scanning high-density barcodes.
  - **Scene 3:** This setting is for general retail applications.
  - **Scene 4:** Another setting also optimized for general retail applications, as well as the performance when scanning barcodes displayed on the screens of devices, especially those with large LCD or with low brightness.
  - **Scene 5:** An application-specific mode optimizes the scanner for scanning low PCS (print contrast) barcodes on circuit boards.
  - **Scene 6:** An application-specific mode optimizes the scanner for scanning barcodes on circuit boards with sufficient ambient light.
  - **Scene 7:** An application-specific mode optimizes the scanner for scanning barcodes from the mobile device screens.



PROGRAM

## Operation Control

### Speaker Tone and Volume Adjust, Power On and Good Read Indicator Control



F\_DEFAULT

| Family Code Selection          | P.C | Parameter Selection                               | Option Code |
|--------------------------------|-----|---|-------------|
| <b>Speaker Tone Adjust</b><br> | SS  | Buzzer tone – mute                                | 0           |
|                                | SS  | Buzzer tone – low (Frequency 1.20 kHz)            | 1           |
|                                | SS  | Buzzer tone – medium(Frequency 2.70 kHz) ▲        | 2           |
|                                | SS  | Buzzer tone – high (Frequency 2.81 kHz)           | 3           |
|                                | SS  | Buzzer tone - extremely high (Frequency 2.93 kHz) | 4           |
|                                | SS  | Power-on beep ▲                                   | 5           |
|                                | SS  | No power-on beep                                  | 6           |
| <b>Speaker Volume</b><br>      | SS  | Low   | 0           |
|                                | SS  | Medium  | 1           |
|                                | SS  | High ▲  | 2           |
| <b>Power On Indicator</b><br>  | SS  | Disable (LED off)                                 | 0           |
|                                | SS  | LED steady on ▲                                   | 1           |
|                                | SS  | LED flash   | 2           |
| <b>Good Read Indicator</b><br> | SS  | Disable   | 0           |
|                                | SS  | Enable ▲  | 1           |




PROGRAM

## Operation Control 1D Code Inverse Reading



F\_DEFAULT

| Family Code Selection   | P.C      | Parameter Selection | Option Code |
|---|----------|---------------------|-------------|
| 1D Barcode Inverse Reading<br> | SS<br>SS | Disable ▲<br>Enable | 0<br>1      |

- With **1D Barcode Inverse Reading** enabled, besides traditional 1D barcode with darker lines over lighter background, the scanner can also read inversed 1D barcode consist of lighter lines over darker background. Be aware this function may slow down the decoding speed under certain conditions.



PROGRAM

## Operation Control

### Reread Delay, Good Read Delay Control, and Good Read Duration



F\_DEFAULT

| Family Code Selection  | P.C | Parameter Selection  | Option Code |
|--|-----|----------------------|-------------|
| <b>Reread Delay</b><br><b>(Double Scan Verification)</b><br> | SS  | Disable              | 0           |
|  | SS  | Immediate time out ▲ | 1           |
|  | SS  | Short time out       | 2           |
|  | SS  | Medium time out      | 3           |
|  | SS  | Long time out        | 4           |
|  | SS  | Force verification   | 5           |
| <b>Good Read Delay</b><br>                                   | SS  | None ▲               | 0           |
|  | SS  | 200 msec.            | 1           |
|  | SS  | 500 msec.            | 2           |
|  | SS  | 1 sec.               | 3           |
|  | SS  | 1.5 sec.             | 4           |
|  | SS  | 2 sec.               | 5           |
|  | SS  | 3 sec.               | 6           |
| <b>Good Read Duration</b><br>                                | SS  | Short                | 0           |
|  | SS  | Medium ▲             | 1           |
|  | SS  | Long                 | 2           |
|  | SS  | Extremely long       | 3           |
|  | SS  | Extremely short      | 4           |

- The **Reread Delay (Double Scan Verification)** is designed to inhibit FuzzyScan from reading the same barcode twice in pre-defined short duration. Force Verification will not allow reading of the same barcode twice.
- This **Good Read Delay** is the minimum amount of time before the scanner can read another barcode.
- Use **Good Read Duration** to adjust the length of good read beeps according to user preference and work environment.



PROGRAM

## Operation Control

### Light Source On Time and Hands-free Time-out



F\_DEFAULT

| Family Code Selection           | P.C                              | Parameter Selection   | Option Code                |
|---------------------------------|----------------------------------|---|----------------------------|
| <b>Light Source On Time</b><br> | SS<br>SS<br>SS<br>SS<br>SS<br>SS | Extremely short ▲<br>Immediate<br>Short<br>Medium<br>Long<br>Extremely long | 0<br>1<br>2<br>3<br>4<br>5 |
| <b>Hands-free Time-out</b><br>  | SS<br>SS<br>SS<br>SS<br>SS       | Short ▲<br>Medium<br>Long<br>Extremely long<br>Disable                      | 0<br>1<br>2<br>3<br>4      |

- The **Light Source On Time** is a pre-defined timer for the scan session under presentation mode. The scanner keeps looking for barcode to decode until the timer out. If the scanner cannot decode any barcode successfully before the time duration is up, the result will be classified as a "No Good read" (NG).
- Operation modes categorized as "Hands-free Mode" include Presentation Mode and Force Mode. The Hands-free mode will be automatically changed to trigger mode when you press the trigger button. You can decide how long the scanner remains in trigger mode by setting the **Hands-free Time-out**. Once the time-out duration is up (if there's no any trigger operation), the scanner will revert to the original Hands-free mode.



PROGRAM

## Operation Control

### OK/NG Beep Control, NG, Object-in, and Object-out Message Output



F\_DEFAULT

| Family Code Selection                | P.C                  | Parameter Selection   | Option Code             |
|--------------------------------------|----------------------|---|-------------------------|
| <b>OK/NG Beep Control</b><br>        | SS<br>SS<br>SS<br>SS | Disable OK and NG beep<br>Enable OK and NG beep<br>Enable OK beep while disable NG beep ▲<br>Enable NG beep while disable OK beep                       | 0<br>1<br>2<br>3        |
| <b>NG Message Output</b><br>         | SS<br>SS<br>MS       | None ▲<br>Message "NG"<br>User defined message (1~15 characters)<br>Maximum 15-character input; scan "FIN" to terminate this section.                   | 0<br>1<br>2, [ 00- 7F ] |
| <b>Object-in Message Output</b><br>  | SS<br>SS<br>MS       | None ▲<br>Message "OBJECT_IN" with CRLF<br>User defined message (1~15 characters)<br>Maximum 15-character input; scan "FIN" to terminate this section.  | 0<br>1<br>2, [ 00- 7F ] |
| <b>Object-out Message Output</b><br> | SS<br>SS<br>MS       | None ▲<br>Message "OBJECT_OUT" with CRLF<br>User defined message (1~15 characters)<br>Maximum 15-character input; scan "FIN" to terminate this section. | 0<br>1<br>2, [ 00- 7F ] |

- The **NG Beep** and **NG Message Output** are only available under Presentation Mode.
- With **NG Message Output** enabled under Presentation Mode, if the scanner cannot successfully find and decode any barcode within a time duration (the **Light Source On Time**) after it is triggered, it stops the scan session and sends out a pre-defined NG (No Good read) message to the host equipment.
- **Object-in Message Output** is available under presentation mode either with Image Sensing or with Proximity Sensing. With this function enabled, once the scanner detects any object entering its detection range, it sends out a predefined message to the host when it starts a scan session.
- **Object-out Message Output** is only available under presentation mode with Proximity Sensing. With this function enabled, once the scanner finds that the detected object exiting its detection range, it sends out a predefined message to the host.



PROGRAM

## Operation Control

### Batch Reading



F\_DEFAULT

| Family Code Selection    | P.C | Parameter Selection | Option Code            |
|--------------------------|-----|---------------------|------------------------|
| <b>Batch Reading</b><br> | SS  | Disable ▲<br>Enable | [FIN]<br>[Rules] [FIN] |

▪ **Batch Reading:** Before enabling the function, please use FuzzyScan PowerTool software to set up “Batch Reading” rule. When this function is enabled, you can scan multiple barcodes one by one continuously upon one trigger event. The scanner reports a good read beep and indication only if all barcodes set by the “Batch Reading” rules are read. Otherwise, the scanner reports an error beep and indication. The scanned data will be transmitted according to the preset sequence which is defined in “Batch Reading” rules regardless the scanned order of those barcodes.

▪ **Batch Reading Rule:**

- To set the Batch Reading rule
  - 1.Scan the **PROGRAM** symbol.
  - 2.Scan the **Batch Reading** symbol (Family Code).
  - 3.Use the **Option Code** to define the preset Batch Reading rule.
  - 4.Scan the **FIN** symbol.
  - 5.Scan the **END** symbol to save your Batch Reading rule.

Note: Scan the **ABORT** and **END** symbol to exit without saving any Batch Reading rule setting.
- When you scan “None”, the preset Batch Reading Rule will be cancelled.
- Batch Reading Rule Syntax:  
**[n] [Element 1] FF [Element 2] FF [Element 3] FF ...[Element n] FF**  
 Where **n** is the number of elements in the overall rule. The number of elements is up to 16.FF indicates the end of one element.
- Element structure:  
**[Cino ID Hex value] [Code length] [Character match(es)]**  
 Where:
  - **[Cino ID Hex value]**  
 Length: 2 byte  
 Please find Cino ID hex value from **Symbology ID Table** in appendix. Locate the Hex value for the symbology and scan the 2 digit hex values from the **Option Code**.  
 Note: 99 is the universal number, indicating all symbologies.



- **[Code length]**  
Length: 4 byte  
Specify what length of data output will be acceptable for this symbology. When you calculate the length, you must consider the whole data string which includes the programmed Preamble, Postamble, Scanned Data Length, Prefix/Suffix Symbol ID or AIM ID. Scan the four digit data length from the **Option Code**.  
Note: 40 characters is entered as 0040; 9999 is a universal number, indicating all lengths.
- **[Character match]**  
Length: 2-8 byte  
You can refer to **HEX/ASCII Reference Table** to find the Hex value that represents the character(s) you want to match. Use the **Option Code** to scan the alphanumeric combination that represents the ASCII characters. You can match up to 4 characters which are counted from the start character of the whole **Data String**.  
Note: When setting the matched character(s), you must match the content of the whole Data String, including the programmed Preamble, Postamble, Scanned Data Length, Prefix/Suffix Symbol ID OR AIM ID if you had defined. **FF** is the universal character, indicating all characters.
- **Batch Reading rule example**  
In this example, you are scanning Code 39, Code 128, and Code 93 barcodes, but you would like to output the data in following sequence:  
Code 128 - Code 39 - Code 93



B-CODE39



A-CODE128



C-CODE93

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

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

The breakdown of the command line is shown below:

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

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

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

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

The breakdown of the command line is shown below:

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

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

- Structure of **Data String**

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



PROGRAM

## Condensed DataWizard

### Preamble, Postamble, Data Length, Symbol ID Transmission



F\_DEFAULT

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

- **DataWizard** is the most powerful, Artificial-Intelligence based data editing expert system provided specially for the FuzzyScan family barcode 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 concern, **Full-feature DataWizard** is only supported by **PowerTool**. Through the PowerTool, all settings and configurations can be done on-screen on Windows-based operating system.
- A **Condensed Version DataWizard** is provided by each FuzzyScan scanner. Through this menu, the condensed DataWizard can be utilized easily via barcode menu readings.
- 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, as well as consult your local FuzzyScan vendor or our web site for further assistance.



PROGRAM

## Condensed DataWizard Data Formatter Setting



F\_DEFAULT

| Family Code Selection        | P.C                   | Parameter Selection  | Option Code                                 | 2ndOption Code                                 |
|------------------------------|-----------------------|--|---|--|
| <b>Formatter Control</b><br> | SS<br><b>MS</b><br>MS | Disable ▲<br>Select one barcode symbology<br>Select all barcode symbologies      | <b>FIN</b><br><b>(2 digits)</b><br>00       | automatic termination<br>automatic termination |
| <b>1st Insertion</b><br>     | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits identified position; max. 3 insertion characters | <b>FIN</b><br><b>(2 digits)</b><br>position | [1-3 characters], [FIN]                        |
| <b>2nd Insertion</b><br>     | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits identified position; max. 3 insertion characters | <b>FIN</b><br><b>(2 digits)</b><br>position | [1-3 characters], [FIN]                        |
| <b>3rd Insertion</b><br>     | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits identified position; max. 3 insertion characters | <b>FIN</b><br><b>(2 digits)</b><br>position | [1-3 characters], [FIN]                        |
| <b>4th Insertion</b><br>     | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits identified position; max. 3 insertion characters | <b>FIN</b><br><b>(2 digits)</b><br>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 barcode 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 “**Barcode Selection**” and “**Position Calculation**” of data formatter, please refer to page 75 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                                  | 2ndOption Code                                 |
|-------------------------------------|-----------------------|---|--|--|
| <b>Verifier Control</b><br>         | SS<br><b>MS</b><br>MS | Disable ▲<br>Select one barcode symbology<br>Select all barcode symbologies   | <b>FIN</b><br><b>(2 digits)</b><br><b>00</b> | automatic termination<br>automatic termination |
| <b>Identified Data Length</b><br>   | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>Determine the identified data length for verification. | <b>FIN</b><br><b>(2 digits)</b>              |  |
| <b>1st Identified Character</b><br> | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits checking position; 1 identified character     | <b>FIN</b><br><b>(2 digits)</b><br>position  | [00-7F]  |
| <b>2nd Identified Character</b><br> | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits checking position; 1 identified character     | <b>FIN</b><br><b>(2 digits)</b><br>position  | [00-7F]  |
| <b>3rd Identified Character</b><br> | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits checking position; 1 identified character     | <b>FIN</b><br><b>(2 digits)</b><br>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 Barcode 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 “**Barcode Selection**” and “**Position Calculation**” of **Data Verifier**, please refer to page 75 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                                 | 2ndOption Code                                 |
|-----------------------------|----------------|--|---|--|
| <b>Replacer Control</b><br> | SS<br>MS<br>MS | Disable ▲<br>Select one barcode symbology<br>Select all barcode symbologies  | <b>FIN</b><br><b>(2 digits)</b><br>00       | automatic termination<br>automatic termination |
| <b>1st Replacement</b><br>  | SS<br>DS       | Disable ▲<br>Enable<br>2-digits identified position; 1 replacement character | <b>FIN</b><br><b>(2 digits)</b><br>position | [00-7F]  |
| <b>2nd Replacement</b><br>  | SS<br>DS       | Disable ▲<br>Enable<br>2-digits identified position; 1 replacement character | <b>FIN</b><br><b>(2 digits)</b><br>position | [00-7F]  |
| <b>3rd Replacement</b><br>  | SS<br>DS       | Disable ▲<br>Enable<br>2-digits identified position; 1 replacement character | <b>FIN</b><br><b>(2 digits)</b><br>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 barcode symbologies for replacer control, and provides **Multiple Position Replacement** in the identified position.
- All data must conform to the **Identified Barcode 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 “**Barcode Selection**” and “**Position Calculation**” of Data Replacer, please refer to page75 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><br>       | SS<br><b>MS</b><br>MS | Disable ▲<br>Select one barcode symbology<br>Select all barcode symbologies  | <b>FIN</b><br><b>(2 digits)</b><br>00                    | Automatic termination<br>Automatic termination |
| <b>1st Organization</b><br>        | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits identified position;<br>Forward/backward data transmission setting                       | <b>FIN</b><br><b>(2 digits)</b><br>position<br>direction | 0 (Forward) ▲<br>1 (Backward)                  |
| <b>2nd Organization</b><br>        | SS<br><b>DS</b>       | Disable ▲<br>Enable<br>2-digits identified position;<br>Forward/backward data transmission setting                       | <b>FIN</b><br><b>(2 digits)</b><br>position<br>direction | 0 (Forward) ▲<br>1 (Backward)                  |
| <b>Include/Exclude Control</b><br> | SS<br><b>DS</b>       | Transmitted data excluded the data of identified position ▲<br>Transmitted data included the data of identified position | 0<br>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 barcode 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 75 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 “**Barcode Selection**” and “**Position Calculation**” of Data Organizer, please refer to page 75 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table**.



## Select a Barcode Symbology

You can select one or all types of barcode 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 barcode, please select one of the option code listed below.

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

| 2D Barcode Symbology |    |                       |    |
|----------------------|----|-----------------------|----|
| QR Code              | A0 | MaxiCode              | A2 |
| Micro QR Code        | A0 | Aztec Code            | A3 |
| DataMatrix           | A1 | Chinese Sensible Code | A4 |
| GS1 DataMatrix       | A5 |                       |    |

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

## Position Calculation

### [Data Formatter]

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

|    |   |    |   |    |   |    |   |    |   |    |
|----|---|----|---|----|---|----|---|----|---|----|
|    | X |    | X |    | X |    | X |    | X |    |
| 00 |   | 01 |   | 02 |   | 03 |   | 04 |   | 05 |

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

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

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

## Application Example

If your barcode 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 barcode is actually with 16-digit length.
- Allow barcode 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 Barcode : 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 barcode 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 barcode 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 barcode 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 barcode 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.

## **APPENDIX**

## Symbology ID Table

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


| 1D Symbology ID Table  |   |           |       |            |                  |             |  |           |         |            |                |
|--|---|-----------|-------|------------|------------------|-------------|--|-----------|---------|------------|----------------|
| Code Family  | Primary Format  | Cino ID   |       | AIM ID     |                  | Code Family | Primary Format   | Cino ID   |         | AIM ID     |                |
|  |   | Hex Value | Char. | Code Char. | Modified Char.   |             |  | Hex Value | Char.   | Code Char. | Modified Char. |
| UPC  | UPC-A   | 2         | A     | E          | 0                | EAN/JAN     | EAN/JAN-8  | 05        | N       | E          | 4              |
|  | UPC-A with 2 suppl.   | 32        |       |            | 1                |             | EAN/JAN-8 with 2 suppl.  | 35        |         |            | 1              |
|  | UPC-A with 5 suppl.   | 42        |       |            | 2                |             | EAN/JAN-8 with 5 suppl.  | 45        |         |            | 2              |
|  | UPC-E   | 3         | E     |            | 0                |             | EAN/JAN-13   | 04        | F       | E          | 0              |
|  | UPC-E with 2 suppl.   | 33        |       |            | 1                |             | EAN/JAN-13 with 2 suppl.   | 34        |         |            | 1              |
|  | UPC-E with 5 suppl.   | 43        |       |            | 2                |             | EAN/JAN-13 with 5 suppl.   | 44        |         |            | 2              |
|  | Example: A UPC-A barcode 012345678950 with 2 supplement 12 is transmitted as <b>JE0012345678950JE112</b>                    |           |       |            |                  |             | Example: A EAN/JAN-8 barcode 49123562 with 5 supplement 12345 is transmitted as <b>JE449123562JE212345</b> |           |         |            |                |
|  | Code 128  | Code 128  | 01    | B          | C                |             | m  | Code 93   | Code 93 | 09         | H              |
| GS1-128  |   | 31        | C     | 1          |                  | Code 11     | Code 11  | 10        | P       | H          | m              |
| Codabar  | Codabar/NW-7  | 06        | D     | F          | m                | MSI/Plessey | MSI/Plessey  | 11        | R       | M          | m              |
| Code 25  | Standard/Industrial 2 of 5  | 08        | I     | S          | 0                | UK/Plessey  | UK/Plessey   | 12        | S       | P          | 0              |
|  | Matrix 2 of 5   | 38        | K     | X          | 0                | Telepen     | Telepen  | 13        | T       | B          | m              |
|  | Interleaved 2 of 5  | 48        | J     | I          | m                | GS1 DataBar | GS1 Databar  | 14        | X       | e          | m              |
|  |   |           |       |            |                  |             | GS1 DataBar Limited  | 22        |         |            |                |
|  |   |           |       |            |                  |             | GS1 DataBar Expanded   | 23        |         |            |                |
|  | China Postal Code   | 58        | L     | X          | 0                | Composite   | Composite Code   | 24        |         |            |                |
|  | German Postal Code  | 68        | M     | I          | m                | Code 39     | Code 39  | 07        | G       | A          | m              |
|  |   |           |       |            | Code 39 Trioptic |             | 47   | W         | X       | 0          |                |
| IATA   | IATA  | 15        | O     | R          | m                |             | Code 32  | 37        | G       | A          | 0              |
| UCC Coupon   | UCC Coupon Code   | Z         |       |            |                  | PDF417      | PDF417   | 17        | V       | L          | m              |
|  |   |           |       |            |                  |             | Micro PDF417   | 25        |         |            |                |
|  | Example : A UPC-A 512345678900 + GS1-128 81010123451297 barcode is transmitted as <b>JE0512345678900JC181010123451297</b>   |           |       |            |                  | Codablock   | Codablock F  | 18        | Y       | O          | m              |
|  | Example: A EAN-13 9923456789019 + GS1-128 81010123451297 barcode is transmitted as <b>JE09923456789019JC181010123451297</b> |           |       |            |                  | Korea Post  | Korea Post Code  | 21        | a       | X          | 0              |
| Remark: Above examples are given for the transmission of AIM ID. |   |           |       |            |                  |             |  |           |         |            |                |


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

## Keyboard Function Code Table

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

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

 To emulate the keyboard function key input for user definable parameters, user must configure actual content using the **Reserved ASCII00– 31** characters, and also **Enable** the “Function Key Emulation”. Otherwise, the Ctrl output will be done by the scanner. Please refer to the above Keyboard Function Code Table which is for IBMPC/XT/AT, PS/2, PS/VP, COMPAQ PC, HP Vectra PC, Notebook PC, APPLE and PowerMac, and WYSE PC Enhanced or fully compatible machines.

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

| <b>Country (refer to Keyboard Layout)&amp; Character</b> |   |             |   |         |   |
|--|---|-------------|---|---------|---|
| United State   | - | Switzerland | - | France  | = |
| Belgium  | - | UK          | - | Germany | - |
| Sweden   | - | Denmark     | - | Norway  | - |
| Spain  | - | Italy       | - |         |   |



## Code Page - Table of Corresponding Languages

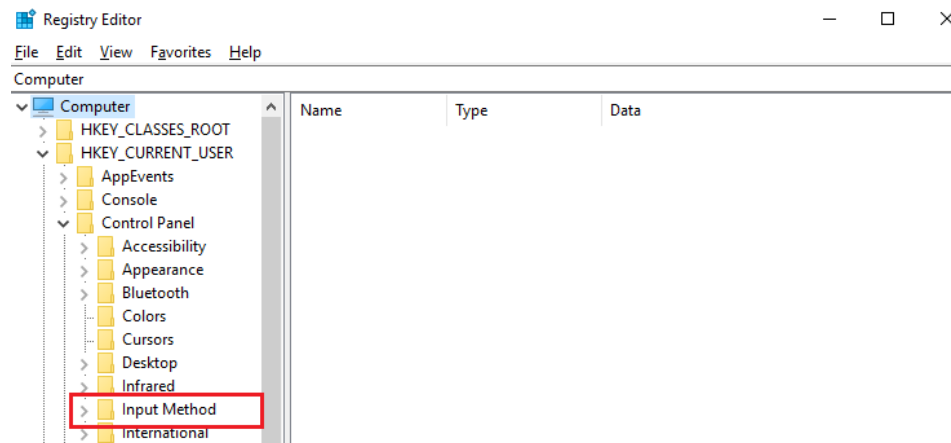
| Description              | Code Page | Description         | Code Page |
|--------------------------|-----------|---------------------|-----------|
| Albanian                 | 850       | Hungarian           | 852       |
| Arabic                   | 1256      | Icelandic           | 850       |
|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

## Code Page - Unicode Hex Input Setup

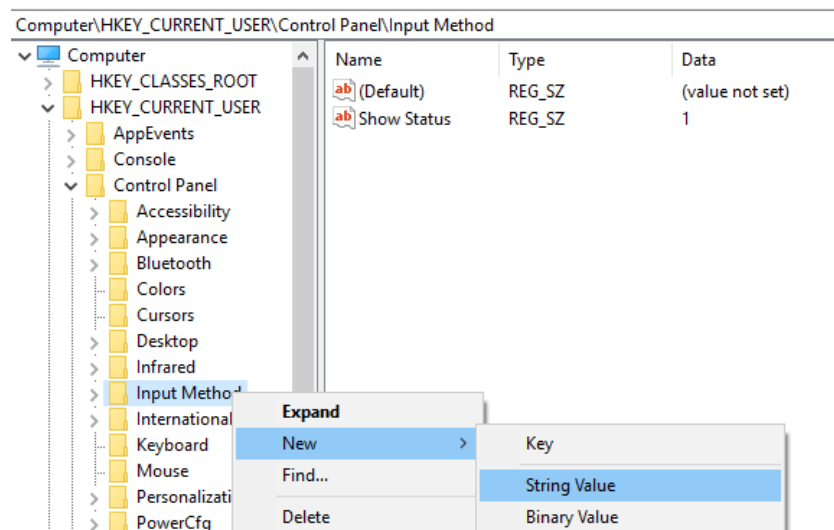
### 1. Windows-Setting up the Windows Registry

**Step 1:** Open the Registry Editor. You can do so by typing “regedit” in the “Search Windows” function or in Command Prompt.

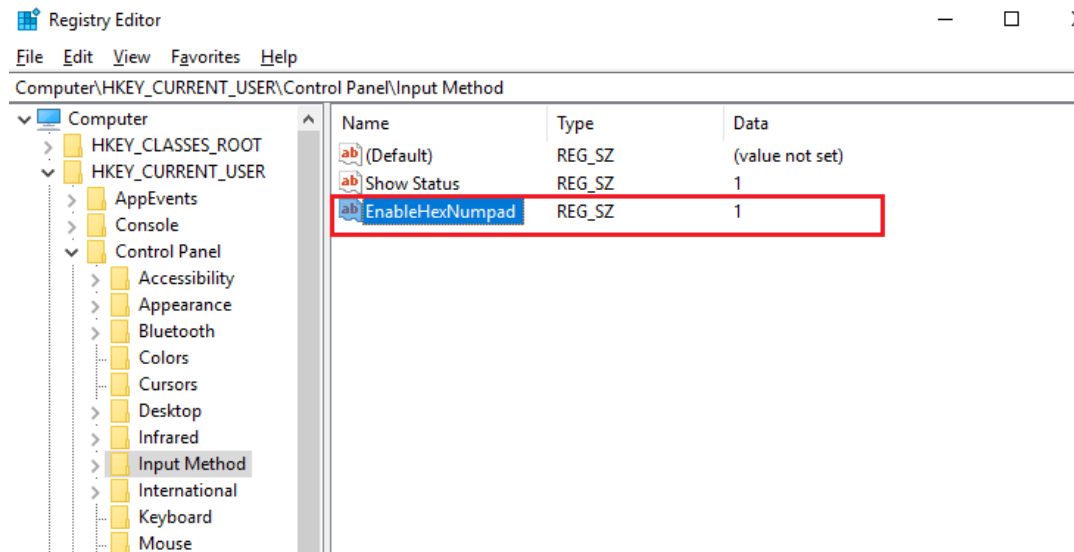
**Step 2:** Go to HKEY\_CURRENT\_USER\Control Panel\Input Method



**Step 3:** Right-click on mouse or press shift + F10 (on keyboard) to add a new String Value (of type “REG\_SZ”).



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



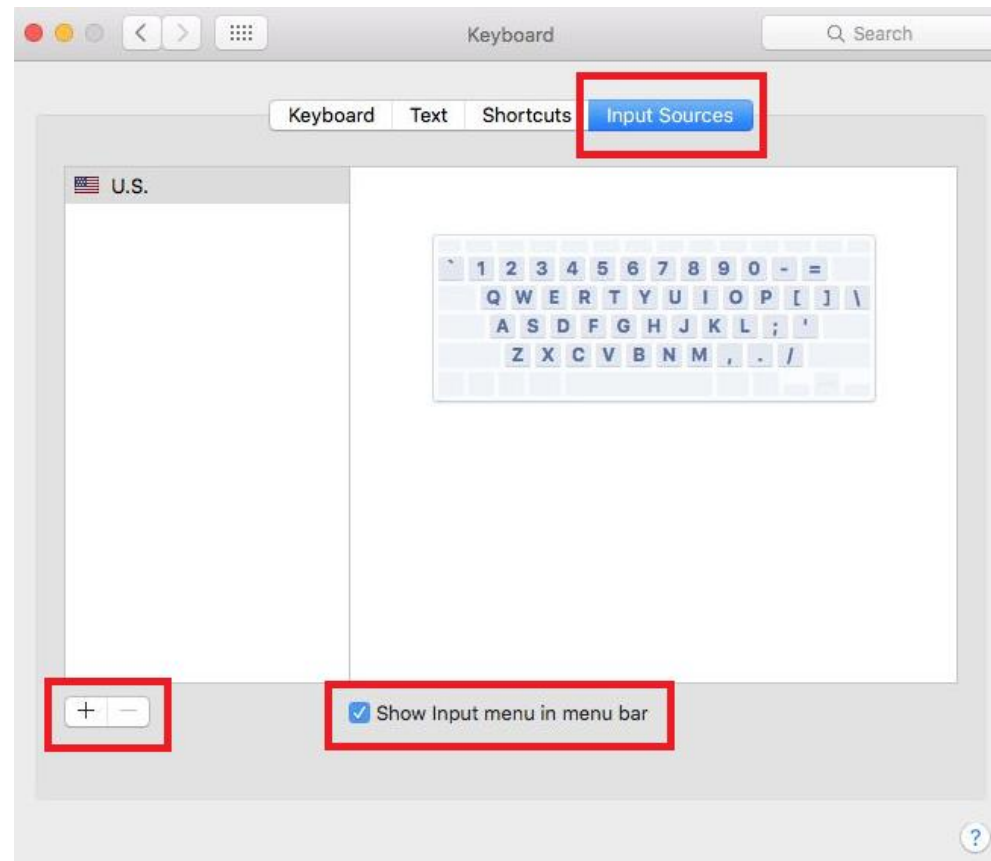
**Step 5:** Reboot the computer.

## 2. MAC - Adding Unicode Hex Input in menu bar

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

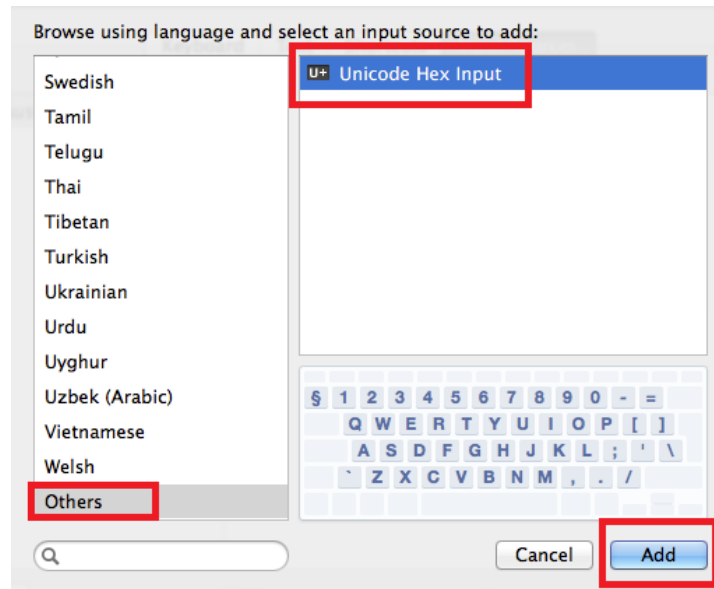


**Step 2:** On the Keyboard tab, click on “Input Sources” and check the “Show Input menu in menu bar” box.



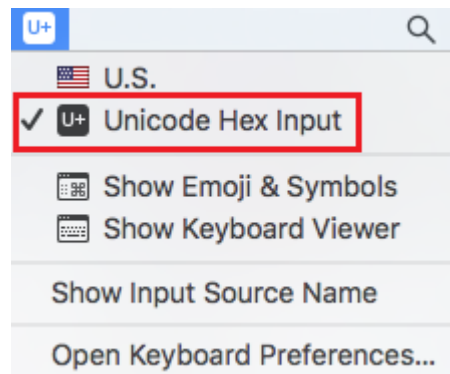
**Step 3:** Click the “+” button to add an input source.

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



**Step 5:** Close the Keyboard Preferences menu.

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



## ASCII Input Shortcut

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


### Example:

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

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

## HEX/ASCII Reference Table

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

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

 : High Byte of HEX Value

 : Low Byte of HEX Value

## Host Interface Quick Set Commands



**RS232 Serial**



**USB Com Port Emulation**



**USB HID Turbo Mode**



**USB HID Standard Mode ▲**

## Operation Mode Quick Set Commands



**Trigger Mode**



**Presentation Mode ▲**



**Multiple Read Mode**



**Force Mode**



Option Codes



0



1



2



3



4



5



6



7



8



9



A



B



C



D



E



F



FIN (Finish)



Abort



END (Exit)

## System Commands



Save User Default



System Information List  
(SYSLIST)



PowerTool Host Link



User Default



Factory Default

- **Factory Default:** After scanning "Factory Default" command, all parameters will be returned to factory default value.
- **Master Default:** After scanning "Master Default" command, the scanner will remain the pre-set parameters of **Host Interface Selection**, **Keyboard Interface Control** (except Record Suffix; Preamble; Postamble), **Serial Interface Control** (except Record Suffix; Preamble; Postamble), and **Wand/Laser Emulation Control**, the rest of parameters will be returned to default value.
- **User Default:** After scanning "Save User Default" command, all current parameters will be stored to the flash memory. Once you change the parameter and would like to return to previous setting, please scan "User Default".



 [www.cino.com.tw](http://www.cino.com.tw)

## On-Counter Scanner Programming Manual

CINO GROUP

PC WORTH INT'L CO., LTD.

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