FUZZYSCAN
WIRELESS IMAGER

Programming Manual

International Edition, Rev C13

cino

Revision History

Rev. No.	Released Date	Description
Rev. A	Oct 16, 2009	❖ First Release
Rev. A1	Oct 22, 2009	❖ Modified "**Getting Started**" - "Clone Function" operation method. ❖ Added "**Appendix**" - "Save Configuration" and "Master Default" System Commands.
Rev. A2	Nov 27, 2009	❖ Modified "**Operation Control**" - "Bluetooth Device Name". ❖ Add "**Appendix**" - "Indications".
Rev. A3	Mar 05, 2010	❖ Modify "**Symbology Reading Control**" - "UPC-A & UPC-E Setting" ❖ Modified "**Serial Interface Control**" – Renamed "Time Out Control" to "Serial Response Time-out". ❖ Modified "**Operation Control**" – "Operation Mode" - Renamed "Presentation Scanning Mode" to "Presentation Control". ❖ Modified "**Operation Control**" – "Rename "Auto Power Off Duration" to "Light Source On Time". ❖ Modified "**Operation Control**" – "Good Read Duration" ❖ Modified "**Operation Control**" – "Rename "Presentation Scanning Auto-sense" to "Presentation Auto-sense". ❖ Added "**Operation Control**" – "Presentation Sensitivity"
Rev. A4	Apr 27, 2010	❖ Modified "**Serial Interface Control**" – "Baud Rate(BPS)" ❖ Modified "**Operation Control**" – " Hands Free Time-out"
Rev. A5	Jun 28, 2010	❖ Added "**Symbology Reading Control**" - "UPC/EAN Security Level".
Rev. A5	Jun 28, 2010	❖ Added "**Operation Control**" – " Time Delay to Low Power Trigger" (Renamed to "Time Delay to Low Power Standby Mode" on Rev.C7) ❖ Added "**Operation Control**" – "Good Read Indicator". ❖ Modified "**Operation Control**" – " Scan Rate Control" – Added "Scan Voting"
Rev. A6	Sep 20, 2010	❖ Modify "**Symbology Reading Control**" - Renamed "Scan Voting" to "Supplement Scan Voting" ❖ Modify "**Symbology Reading Control**" – "EAN Setting" ❖ Modify " **Keyboard Interface Control**" – " Keyboard Layout (Language) Setting"

Revision History

Rev. No.	Released Date	Description
Rev. A6	Sep 20, 2010	❖ Modified "**Operation Control**" – " Scan rate Control" ❖ Modified "**Operation Control**" – " Batch Data Quantity Output Format" (Renamed to "Stored Data Output format" on Rev. C7)
Rev. A7	Nov 10, 2010	❖ Modified "**Serial Interface Control**" – "Baud Rate(BPS)"
Rev. A8	Jan 2, 2011	❖ Modified "**Operation Control**" – "Buzzer Tone Adjust"
Rev. A9	Mar 04, 2011	❖ Modified "**Serial Interface Control**" – "Baud Rate(BPS)"
Rev. B1	Mar 22, 2011	❖ Modify "**Symbology Reading Control**" – "Code 39 Setting" ❖ Modified "**Serial Interface Control**" – "Protocol, ACK/NAK Setting"; Added "ACK/NAK Transmission Indication".(Renamed to "ACK Indication" on Rev. B2) ❖ Added " **Appendix**" - "Numeric Bar Codes ".and "Connecting Apple iOS Devices Quick Sets" (Removed and modified to "Toggle between Barcode scanning and On-screen keyboard of mobile devices" on Rev.C7)
Rev. B2	Jul 22, 2011	❖ Modify "**Symbology Reading Control**" – "User Defined symbol" ❖ Modified "**Serial Interface Control**" – "Protocol, ACK/NAK Setting"; Renamed "ACK/NAK Transmission Indication" to "ACK Indication" ❖ Modified "**Serial Interface Control**" – " Serial response time -out" ❖ Added "**Operation Control**" – "Laser Aiming Control" ❖ Modified "**Condensed DataWizard**" – "Select a Br Code Symbology"
Rev. B3	Nov 04, 2011	❖ Modified "**Getting Started**" – " Paging/ Reset button" ❖ Modified "**Symbology Reading Control**" – " Codabar/NW-7 Setting"
Rev. B4	Jan 03, 2012	❖ Modified "**Wand/Laser Emulation Control**" – " Code 39/Code 128 Emulation"
Rev. B5	Mar 05, 2012	❖ Added "**Condensed DataWizard**" – ""1D Barcode Forward-reading Indication", "1D Barcode Backward-reading Indication", and "1D Barcode Direction Indication Transmission"

Revision History

Rev. No.	Released Date	Description
Rev. B6	Jul 25, 2012	❖ Modified "**Host Interface Selection**" ❖ Modified "**Symbology Reading Control**" – " Code 128 Setting" ❖ Modified "**Wand/Laser Emulation Control**" – " Code 39/Code 128 Emulation" ❖ Added "**Operation Control**" – "LED illumination Control" and "LED Illumination Delay"
Rev. B7	Aug 20, 2013	❖ Modified "**Symbology Reading Control**" – "Readable Bar Code Setting" section" ❖ Modified " **Appendix**" - "Symbology ID Table"
Rev. C1	Jan 15, 2014	❖ Supported 2D Functions ❖ Modified "**Getting Started**" – " Preparation before Using", " Use FuzzyScan in HID Mode", and "Batch Scanning" ❖ Added "**Getting Started**" – "Sleep Mode" and "Power Off"
	Jan 23, 2014	❖ Modified "**Operation Control**" – "Presentation Sensitivity"
Rev. C2	May 08, 2014	❖ Support 1D Pocket Scanner ❖ Added "**Host Interface Selection**" - "USB EFT Terminal Mode" ❖ Added "**Appendix**" - "USB HID Legacy Mode" Host Interface and "Abort" Option Codes Quick Set Command
Rev. C3	May 09, 2014	❖ Added "**Getting Started**" – "Clear All Scanned Data" Command.
Rev. C4	Feb. 06, 2015	❖ Added "**Symbology Reading Control**" – " MaxiCode Setting"
Rev. C5	Mar. 09, 2015	❖ Added "**Getting Started**" – "Paging Function" ❖ Added "**Operation Control**" – " Radio Connection Beeps", "HID Mode Transmit Delay" and "Link Quality Control"
Rev. C6	Jun. 03, 2015	❖ Modified "**Operation Control**" – " Good Read Duration" ❖ Modified " **Appendix**" - " Uninstall" Quick Set
Rev. C7	Sep. 09, 2015	❖ Supported 2D Pocket Scanner

Revision History

Rev. No.	Released Date	Description
Rev. C7	Sep. 09, 2015	❖ Added “**Getting Started**” – “ Using the Function Keys of Pocket Scanner”, “ Enter Bluetooth Discoverable Mode”, “How to Delete Last Scanned Data”, “Toggle between Barcode Scanning and On-screen Keyboard input”, “ Check Battery Status” and “Battery Status Indication” ❖ Modified “**Getting Started**” – “ Power Off” and “How to Transmit Stored Data” ❖ Added “**Operation Control**” – “Buzzer Volume”, “Timestamp Functions”, 2D “Stored Data Output Format”, “Radio Link Mode for Discoverable Mode” and “Low Power Stand-by mode Link Indication” ❖ Renamed “**Operation Control**” – “Time Delay Low Power Trigger” to “Time Delay to Low Power Standby Mode” ❖ Removed “**Operation Control**” – “Link Supervision Time Out” ❖ Renamed “**Operation Control**” – “Sleep Time-out Control” to “Radio-off Time-out Control”; ❖ Modified “**Operation Control**” – “HID Mode Transmit Delay”. “Good Read Duration” and “Time Delay to Low Power Standby Mode” ❖ Modified “**Operation Control**” – “Radio-off Time-out Control, Power Off Time-out Control” ❖ Renamed “**Operation Control**” – “Batch Data Quantity Output Format” to “Stored Data Output Format” ❖ Renamed “**Operation Control**” – “Bluetooth Power Saving Mode” to “Bluetooth Sniff Control”; Enable Bluetooth Sniff Control. ❖ Modified “**Operation Control**” – “Link Quality Control” ❖ Added “**Operation Control**” – “On-screen Keyboard Control” ❖ Modified “**Appendix**” – “Toggle between Barcode Scanning and On-screen Keyboard input” ❖ Removed “**Appendix**” – “Sleep” system command
Rev. C8	Dec. 23, 2015	❖ Updated “Revision History” ❖ Modified “**Getting Started**” – “ Toggle between Barcode Scanning and On-screen Keyboard input” ❖ Added “**Operation Control**” – available firmware information for optimized Bluetooth operation behaviors.
Rev. C9	Mar. 17, 2016	❖ Added "**Getting Started**" -A670BT series scanner ❖ Modified “**Operation Control**” – available firmware information for optimized Bluetooth operation behaviors.

Revision History

Rev. No.	Released Date	Description
Rev. C10	May. 31, 2016	❖ Modified “**Operation Control**” – “Timestamp Functions“
Rev. C11	Aug. 04, 2016	❖ Added “**Symbology Reading Control**” – “Small DM Code Reading”
Rev. C12	Oct. 07, 2016	❖ Modified “**Appendix**” – “ Keyboard Function Code Table”
Rev. C13	Mar. 9, 2017	❖ Modified “**Appendix**” – “Scanner Indication” ❖ Modified “**Operation Control**” – “ Buzzer Tone Adjust “ ❖ Moved “Dollar Sign control” from “**Operation Control**” to **“Keyboard Interface Control”**.

Wireless FuzzyScan Reference Manual

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FC	FCC part 15B, FCC part 15C
CE	EN61000-6-2, EN61000-6-3, EN60950-1, EN301 489-1, EN301 489-17, EN300 328 EN55022, EN55024
	CNS13438, CNS14336
	AS/NZS CISPR 22 Class B
	Clause 2, Article 58-2 of Radio Waves Act
VCCI	Class B ITE
	LP0002

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Wireless FuzzyScan
Reference Manual

MIC T401

LED Eye Safety IEC62471 Exempt group

Laser Eye Safety IEC60825-1 Class 1

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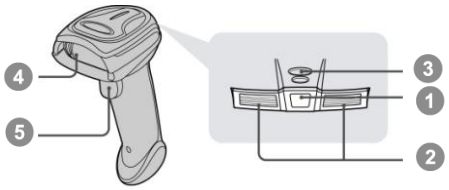
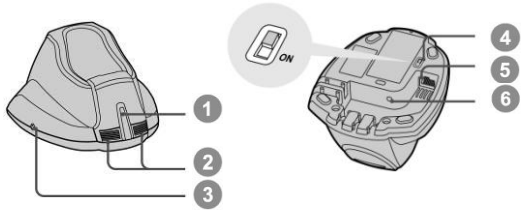
Getting Familiar with Your FuzzyScan

Thank you for choosing Cino FuzzyScan Bluetooth Cordless Image Scanner. Powered by the combination of cutting-edge FuzzyScan Imaging Technology and Bluetooth wireless technology, it not only provides outstanding reading performance, but also delivers the convenience and freedom of mobility. It's ideal for a broad range of applications to unleash your productivity with ease. This document provides a quick reference for installation and operation. The complete documentation is available at **www.cino.com.tw**.

A770BT Series



HB211x Smart Cradle

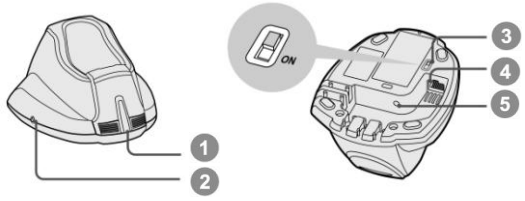


1. Central Indicator
2. Side Indicators
3. Paging/Reset Button
4. USB Bus Power Switch
5. Host Interface Port
6. DC Power Jack

F780BT & L780BT

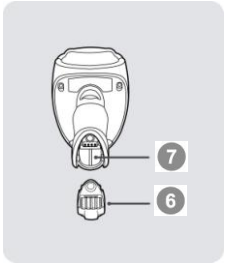
1. Link Indicator
2. Status Indicator
3. Beeper
4. Scan Window
5. Trigger
6. Battery Cavity
7. End Cap

HB2100 USB Charging Cradle

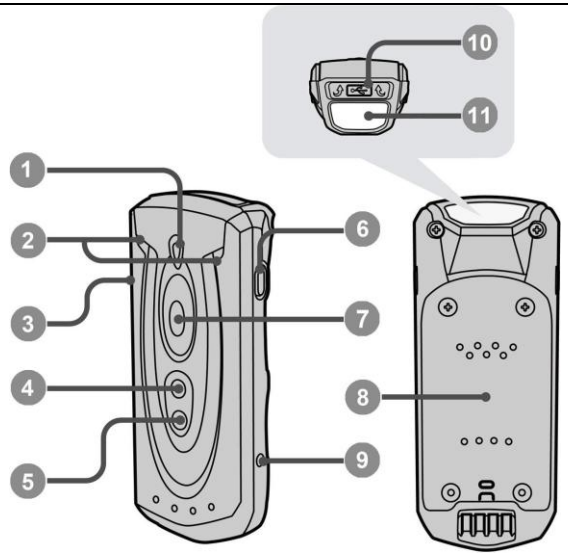


1. Central Power Indicator
2. Reserved
3. USB Bus Power Switch
4. USB Port
5. DC Power Jack

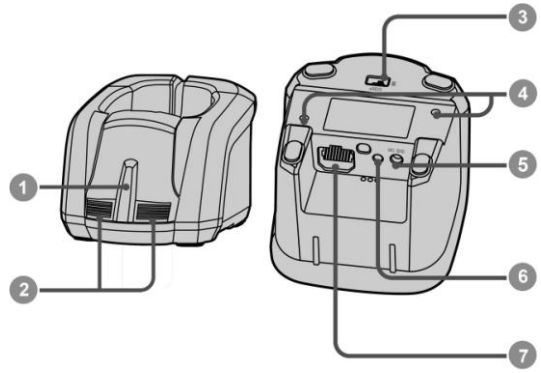
A670BT, F680BT & L680BT



PA670BT & Px680BT Scanners



1	Status Indicator
2	Power/Link Indicators
3	Left Key
4	Function Key 1 (FN1)
5	Function Key 2 (FN2)
6	Right Key
7	Trigger
8	Battery Cover
9	Reset Key
10	Micro USB Port
11	Scan Window



1	Central Indicator
2	Side Indicators (HB3112 only)
3	USB Bus Power Switch
4	Mounting Holes
5	DC Power Jack
6	Paging/Reset Key
7	Host Interface Port (HB3112)
	USB Port (HB3100)

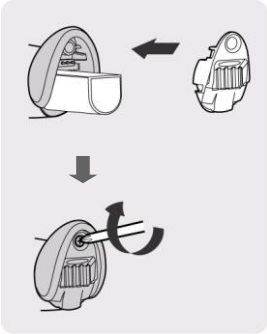
Using the Function Keys of Pocket Scanner:

Function Keys	Functions	Actions
Left Key	Check battery status	Short press the key
	Transmit stored batch data	Long press the key
Right Key	Power off the scanner	Long press the key
Function Key 1	On-screen keyboard toggle	Short press the key
	Enter Bluetooth discoverable mode	Long press the key
Function Key 2	Delete last scanned data (batch scanning)	Short press the key
	Enter batch scanning (inventory mode)	Long press the key

Short Press: Press the key for less than 1 second.
Long Press: Press and hold the key for more than 3 seconds.

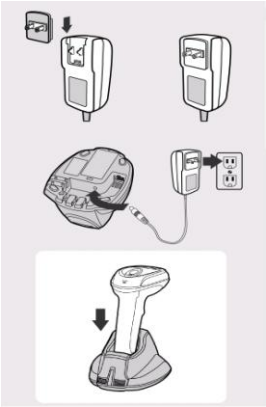
Preparation before Using – Gun type Scanners

Install the Battery



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

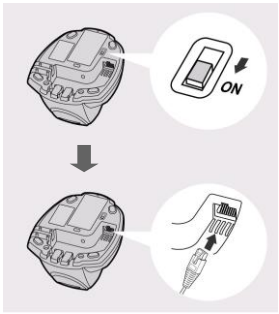
Charging the Battery



1. Choose an appropriate plug and slot it into the power adapter cavity until it is locked. Then plug the AC power plug into the AC wall socket.
2. Plug the DC power cord of power supply unit into the DC Jack of the cradle. The smart cradle emits the power-on beeps and the central indicator gives **one blue blink**. If you use the charging cradle, the central power indicator turns **steady blue**.
3. Place the scanner on the cradle. The status indicator of scanner turns **steady red** if the battery is not fully charged. When the battery is fully charged, the status indicator of scanner turns **steady green.**

Please charge the new battery pack for 8 hours before its first use.

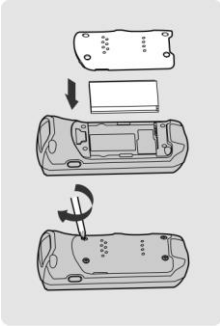
Use USB Bus Power



1. If **USB 3.0** is available in your host device, both battery charging and regular operation can be supported by the USB Bus Power without using external power supply.
2. If only **USB 2.0** is available in your host device, we recommend using external power supply as power source, because the power supplied from USB2.0 is not enough to support both battery charging and regular operation simultaneously.
3. If you want to use this feature, please slide the USB bus power switch to “**ON**”. Then connect the cradle to the host device via USB cable.

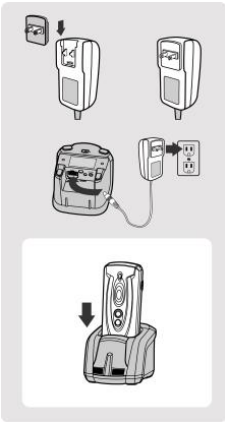
Preparation before Using – Pocket Scanners

Install the Battery



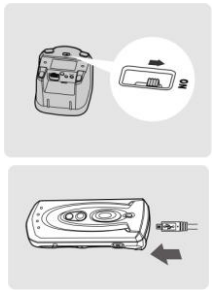
1. Take off the battery cover from the scanner by removing two blue tapes.
2. Ensure the battery contacts of the battery pack are facing the charging contacts inside the battery cavity. Then click the battery pack into the battery cavity carefully.
3. Place the battery cover in the right orientation onto the back of the scanner. Screw in and tighten the four shipped M2 screws in sequence by a small screw-driver in the clockwise direction.

Charging the Battery via Power Supply Unit



1. Choose the right plug and slot it into the power supply unit cavity until a “click” is heard. Then plug the power supply unit into the wall outlet
2. Please make sure the USB bus power switch is in “OFF” position.
3. Plug the DC connector of the power supply unit into the DC Jack of the cradle. The cradle emits four beeps. For the Smart cradle, the central indicator **blinks blue once** and side indicators **lights red**. For the charging cradle, the central indicator lights **blue**.
4. Place the scanner onto the cradle. When the battery is fully charged, the status indicator of scanner will light **green**.

Charge the Battery via USB 3.0 Port



The scanner can also be charged via the USB 3.0 port without the power supply unit. You can connect the cradle to USB 3.0 port of host device by a USB cable, then slide the USB bus power switch to “ON”. After that, place the scanner onto the cradle.

The scanner can also be charged via its micro USB port by connecting the micro USB cable to USB 3.0 port of host device or the commercial USB power adapter connected to the wall socket.

Decide Your Radio Link Mode

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

When the radio link is disconnected, the scanner is capable of reconnecting the radio link automatically when it returns to the communication coverage. But please note that this feature is not available in SPP slave mode. If you would like to change the radio link mode, please scan the "**Uninstall**" command to reset the scanner to uninstall state.

PAIR Mode

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

PICO Mode

For the requirement of multiple connections, up to 7 scanners can be connected to one smart cradle concurrently. If you would like to un-pair all scanners paired with the smart cradle, please press and hold the paging/reset button of the smart cradle for more than 5 seconds. If you just want to un-pair part of the paired scanners, please take those paired scanners to scan the "Uninstall" command one by one.

HID Mode

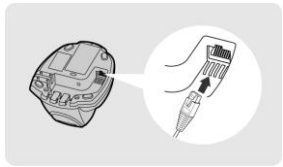
Through the most useful HID service, the scanner can work as a **Bluetooth Keyboard**. In this mode, the scanner will be discoverable by the radio connection request issued by the remote host device. For some cases, you may be requested to enter the Passkey (PIN) to establish the Bluetooth connection for security purpose.

SPP Master/Slave Mode

Through the standard SPP service, the scanner can work as a **Bluetooth Serial Device**. In SPP master mode, the scanner initiates the radio connection request to the remote slave device. In SPP slave mode, the scanner will be discoverable by the radio connection request issued by the remote host device.

Use FuzzyScan in PAIR Mode

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



3. Turn on the power of your host device.
4. Power on or wake up the scanner by pressing the **Trigger** key if the scanner is power-off.
5. This scanner is pre-paired with the shipped smart cradle, so you will see the link indicators of scanner **blink blue per 2.5 seconds**, and the central indicator of the smart cradle **light blue**. If the scanner and smart cradle are not paired, the status indicator of scanner and the side indicators of smart cradle **blink red and green alternatively** (in "**Uninstall**" state). Please follow step 6 to establish the connection.
6. Scan "PAIR mode" command. The status indicator of scanner will turn steady red immediately.

Uninstall

PAIR Mode

Place the scanner on the smart cradle, then you will hear one short beep to indicate the pairing process is activated. The scanner will emit continuous short clicks and the link indicator of scanner will flash blue quickly during the pairing process. When you hear 4 beeps in ascending tone, the pairing process is completed. You will see that the link indicator of scanner gives **1 blue blink per 2.5 seconds** and the central indicator of the smart cradle **lights blue**.

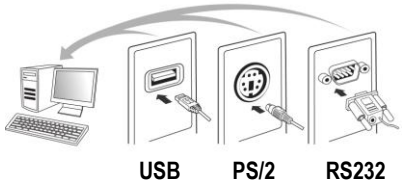
If the scanner pairing process failed or it's not placed on the smart cradle within 20 seconds, you will hear 2 "Di-do Di-do" beeps to warn the failure of pairing, the scanner will return to uninstall state automatically.

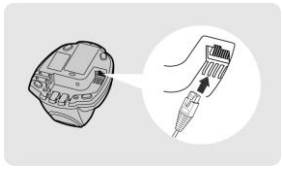
7. Scan the corresponding host interface quick set command to complete the installation.

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

Use FuzzyScan in PICO Mode

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





2. Turn on the power of your host device.

3. Ensure the side indicators of the smart cradle **blink red and green alternatively** (in "**Uninstall**" state). If the smart cradle is paired with other scanners, please press and hold the paging/reset button for **more than 5 seconds** to un-pair all paired scanners. Then the smart cradle will return to uninstall state automatically.

4. Prepare the scanners you desire to pair with smart cradle. Power or wake up the scanner by pressing the **Trigger** key if the scanner is power-off. Ensure the status indicator of each scanner **blinks red and green alternatively** (in "**Uninstall**" state). If the scanner is not in uninstall state, please scan the "Uninstall" command to un-pair the scanner, then scan the "**PICO mode**" command, and the status indicator of scanner will light red.

Uninstall

PICO Mode

Place the scanner onto the smart cradle, then you will hear one short beep to indicate the pairing process is activated. The scanner will emit continuous short clicks and the link indicator of scanner will flash blue quickly during the pairing process. When you hear 4 beeps in ascending tone, the pairing process is completed. You will see that the link indicator of scanner **blinks blue once per 2.5 seconds**; the central indicator of the smart cradle **lights blue** and its side indicators **light green**.

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

5. Please scan the corresponding host interface quick set command to complete the installation. Then repeat the same procedure to pair other scanners with the smart cradle.

For user's convenience, the smart cradle will automatically assign the ID numbers to each scanner. Please scan the **System Information** command to check the assigned ID number of each scanner.

Clone Function

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

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

Save Configuration

Clone

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

Data Transmission Parameter
Field Delimiter
Data Transmission Format
Host Interface Control
Host interface Selection
Keyboard Interface Control
Keyboard Layout
Intermessage Delay
Interfunction Delay
Intercharacter Delay
Caps Lock Control
Caps Lock Release Control
Function Key Emulation
Key Pad Emulation
Upper/Lower Case

Serial Interface Control
Handshaking Protocol
Intermessage Delay
Interfunction Delay
Intercharacter Delay
Baud Rate
Data Frame
Time Out Control
Wand Emulation Control
Output Polarity
Initial Signal State
Margin Time
Module Time
Narrow/Wide Ratio
Code39 Emulation

Use FuzzyScan in HID Mode

1. Ensure the battery is fully charged. Power on the scanner by pressing the Trigger key within radio range if the scanner is power-off, and ensure the status indicator of scanner gives **alternative red and green blinks** (in "**Uninstall**" state). If the scanner is not in uninstall state, please scan the "Uninstall" command first.

Uninstall

If your remote host is equipped with latest Bluetooth drivers, or it's an iOS or Android device, you are recommended to use "**HID Mode**" for quick pairing. If necessary, you may use "**HID Mode with Passkey**" to establish a more secure connection, If you frequently experienced the problem in using HID mode, please try " **HID Legacy Mode**" instead.

HID Mode

HID Legacy Mode

HID Mode with Passkey

Once you scan one of above commands, the link indicator of scanner will **blink blue 3 times per 2 seconds** during searching process. You have to execute the Bluetooth Discovery procedure to find available Bluetooth device, then select "F(L/A)xxxBT-xxxx" or "PF(L/A)xxxBT-xxx".

2. If you use "**HID Mode**", please go to step 5.
3. If you use "**HID Mode with Passkey**", you will be requested to enter the Passkey (PIN) on the remote host. Please enter the Passkey (PIN) accordingly by scanning the "**Option Code**" (Page 97), and then scan the "**FIN (Finish)**" to end the Passkey entry, then go to step 5.
4. If you scan "**HID Legacy Mode**", the Passkey (PIN) may be requested. Please enter "**00000000**" (default setting). You will see "Keyboard on F(L/A)xxxBT-xxxx" or "Keyboard on PF(L/A)xxxBT-xxxx". Please double click this HID service to establish the connection between scanner and remote host device.
5. The scanner will emit 4 beeps in ascending tone to indicate the connection is established. At the same time, the link indicator of scanner will **blink blue once per 2.5 seconds** to indicate the scanner is in radio-connected state.

   Please note that if the scanner is not connected to the host device within 1 minute after scanning the above command, the scanner will enter radio-off status automatically. You can just press the trigger to wake up the scanner to continue the installation.

The installation procedure may vary depending on different remote host devices, operating systems and the Bluetooth drivers. Please consult your professional IT consultant to obtain necessary support. For more detailed information, please visit CINO website.

Use FuzzyScan in SPP Mode

Establish SPP Master Connection

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

Uninstall

SPP Master Mode

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

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

The above procedures are based on popular Windows environment. But the installation procedure may vary depending on different remote host devices, operating systems and the Bluetooth drivers. Please consult your professional IT consultant to obtain necessary support if any problem has been encountered during the installation processes. For more detailed information, please visit CINO website.

Establish SPP Slave Connection

1. Ensure the battery is fully charged and a virtual COM port is available in your remote host for connecting the scanner. If not, please go to the folder "**Client Applications**" located in Bluetooth Advanced Setting. Click the "**Add COM Port**" to add one more Bluetooth COM port.

2. Power on or wake up the scanner by pressing the **Trigger** key within radio coverage if the scanner is power-off state, and ensure the status indicator of scanner **blinks red and green alternatively** (in "**Uninstall**" state). If the scanner is not in uninstall state, please scan the "Uninstall" command first. Then scan the "SPP Slave Mode" command, and the link indicator of scanner will **blink blue 3 times per 2 seconds** during searching process.

Uninstall

SPP Slave Mode

3. You have to execute the Bluetooth Discovery procedure to find all available Bluetooth device list in your remote host. You will see 'F(L/A)xxxBT-xxxx'' or 'PF(L/A)xxxBT-xxxx'' is shown in the list if the scanner is successfully discovered.

4. Double click the "F(L/A)xxxBT-xxxx" or 'PF(L/A)xxxBT-xxxx'' on the discovered Bluetooth devices. If the PIN Code or Passkey is requested for security connection, please enter "**00000000**" (default setting). You will see "Serial Port on F(L/A)xxxBT-xxxx" or 'PF(L/A)xxxBT-xxxx''. Please double click this SPP service to establish the connection between scanner and remote host device.

5. The scanner will emit 4 beeps in ascending tone to indicate the connection is established. At the same time, the link indicator of scanner will **blink blue once per 2.5 seconds** to indicate the scanner is in radio-connected state.

   Please note that if the scanner is not connected to the host device within 1 minute after scanning the "**SPP Slave Mode**" command, the scanner will enter radio-off status automatically. You can just press the trigger to wake up the scanner to continue the installation.

The above procedures are based on popular Windows environment. But the installation procedures may vary depending on different remote host devices, operating systems and the Bluetooth software drivers. Please consult your professional IT consultant to obtain necessary support if any problem has been encountered during the installation processes. For more detailed information, please visit CINO website.

Enter Bluetooth Discoverable Mode (only available for pocket scanners)

If you use pocket scanner, you can have the scanner entered into Bluetooth discoverable mode for pairing with any remote host easily. When you press and hold the **FN1** for more than 3 seconds, the scanner will enter into preset Bluetooth discoverable mode. You have to carry out the Bluetooth discovery procedure to find the scanner for pairing. The preset Bluetooth profile for discoverable mode is “HID Mode”. You can change the Bluetooth profile to “HID Mode with Passkey” or “SPP Slave Mode”.

Out-of-range Scanning

When the radio connection is established between scanner and remote host device, the scanner will transmit each scanned data right after scanning the barcode. However, the scanner is preset not to scan any barcode data when it loses the radio connection with the remote host device.

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

Enable Out-of-range Scannning

Disable Out-of-range Scanning ◆

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

Power Off

By default, the scanner goes off if the scanner is not used during the user-defined time out duration. If you want your scanner powered off immediately, you can scan the “Power Off” command. For pocket scanner user, you also can power off the scanner by long pressing and holding **Right Key** for more than three seconds. If you would like to activate the scanner, please press the trigger key.

Power Off

Batch Scanning (Inventory Mode)

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

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

If you use pocket scanner, you can also press and hold the **Function Key 2** for more than 3 seconds to enter Batch Scanning, by which 3 beeps will be heard and the status indicator of the scanner will **blink green** at regular interval during batch scanning.

To exit the batch scanning, please scan the “Exit Batch Scanning” command. If you use pocket scanner, you can also exit the batch scanning by pressing and holding **Function Key 2** for more than 3 seconds.

Enter Batch Scanning

Exit Batching Scanning

Using Quantity Feature

The scanner supports quantity feature when it enters batch scanning. When you use quantity feature, the quantity information and scanned barcode data will be stored into the memory storage together. You can enter the quantity information from 1 to 9999 by scanning the following quantity commands right after you scanned the barcode data.

Quantity 0

Quantity 1

Quantity 2

Quantity 3

Quantity 4

Quantity 5

Quantity 6

Quantity 7

Quantity 8

Quantity 9

There are three ways to output the stored barcode data and quantity information. The preset output format is to transmit stored data as many times as the quantity indicated.But you still can set the scanner to output stored barcode data together with quantity information in two fields, and a preset delimter”，” will be output in between. To fulfill different application requirements, both the delimiter and output sequency can be changed as well.

As many times as the quantity indicates ◆

<Quantity><Field Delimiter><Scanned Data>

<Scanned Data><Field Delimiter><Quantity>

How to Transmit Stored Data

The scanner is preset to transmit all the stored data by scanning the “Transmit Stored Data” command. If you use pocket scanner, you can also transmit the stored data by pressing and holding **Left Key** for more than 3 seconds. During the transmission, the scanner will emit continuous short clicks and the link indicator will **blink blue**. Then the scanner will emit two short beeps after data transmission is completed.

Transmit Stored Data

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

Scan Barcode Command ◆

Place Scanner onto the Cradle

Scan command or Place Scanner onto theCradle

How to Delete Scanned Data

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

Clear All Stored Data

Auto Delete Stored Data after Transmission

Keep Stored Data after Transmission ◆

How to Delete Last Scanned Data

If you scanned a wrong barcode, the last scanned data can be deleted by scanning the ‘’Delete Last Scanned Data’’ command. If you use pocket scanner, you can also delete the last scanned data by short pressing the **FN2**.

Delete Last Scanned Data

Toggle between Barcode Scanning and On-screen Keyboard Input

You can toggle between use barcode scanning and on-screen keyboard input of the mobile device. To activate the on-screen keyboard input function; you can turn off the radio by scanning "**Switch On-screen Keyboard**" command. If you use pocket scanner, you can turn off the radio to activate the on-screen keyboard input by short pressing the **FN1** Once you finished the keyboard input, pressing the trigger once to turn on the radio, the on-screen keyboard input function will be inactivated.

The scanner is preset to use "General Approach" by controlling the radio to toggle between barcode scanning and on-screen keyboard input of most popular mobile devices. To work with iOS devices, please scan "iOS Ap n-screen keyboard input. If you use pocket scanner, the **FN1** can be set to "iOS Approach" to quickly toggle iOS on-screen keyboard input, and you can also toggle the iOS on-screen keyboard input by short pressing the **FN1.**

General Approach ◆

iOS Approach

Switch On-screen Keyboard

Above function is available for FuzzyScan Bluetooth Cordless Scanner:

One of following Bluetooth scanners with proper firmware preload:

λ Bluetooth Image Scanners

F680BT / F780BT :	Rev. 4.00.05 and above
L680BT / L780BT:	Rev. 4.00.05 and above
A670BT :	Rev. 1.00.01 and above
A770BT :	Rev. 1.00.14 and above
	Rev. 2.00.02 and above

λ Bluetooth Pocket Scanners:

PF680BT / PL680BT :	Rev. 1.00.05 and above
PA670BT :	Rev. 1.00.01 and above

Presentation Scanning (Gun type only)

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

Enable Auto-sense

Disable Auto-sense ◆

Check Battery Status

You can check battery status of the scanner by short pressing the Left Key or scanning "Check Battery Status" command. Please refer to the "Battery Status Indication" shown on page 1 for details.

Check Battery Status

Available Firmware:
F680BT/F780BT, L680BT/L780BT: 3.01.08 and above; 4.00.05 and above
A670BT: 1.00.01 and above;
A770BT: 1.00.14 and above; 2.00.03 and above
PF/PL680BT: 1.00.05 and above; PA670BT: 1.00.01 and above

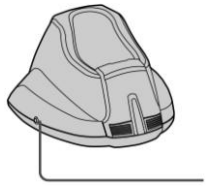
Battery Status Indication

The following corresponding flashes of the LED indicators present the current battery status of the scanner.

LED Indication	Battery Status
3 green and blue flashes	More than 75%
3 green flashes	More than 50%
3 orange flashes	More than 25%
3 red flashes	Less than 25%

Paging Function

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



Paging/Reset Button

Paging

Bar Code Programming Menu

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

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

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

System Command

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

Family Code

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

Option Code

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

Programming Procedures

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

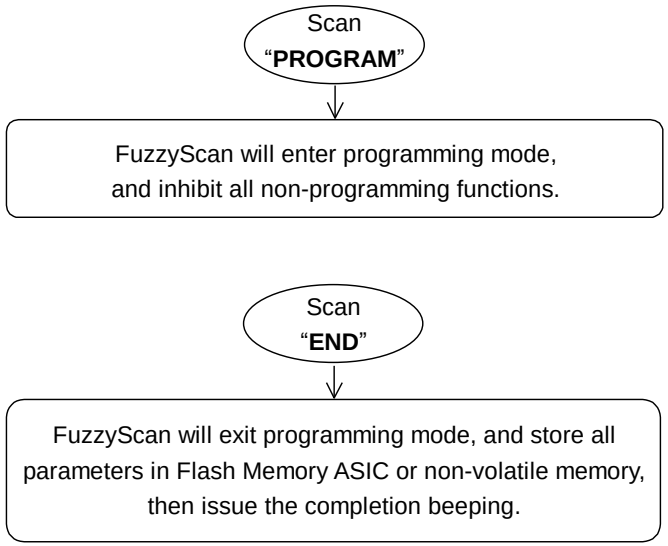
The programming procedures of FuzzyScan are designed as simple as possible for ease of setting. Most programming families take the **Single Scan Selection** programming procedure. But several programming families have more complex and flexible programmable options, and you must take **Multiple Scans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

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

Conventions of Programming Menu

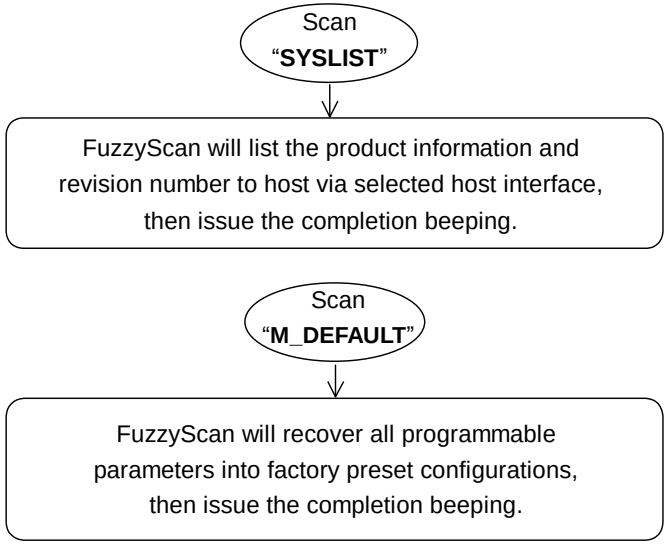
Conventions	Descriptions
◆	**Factory Default Value**
P.C.	**Programming Category** **SS** : Single scan selection **MS** : Multiple scans selection **CS** : Cycling scan selection **DS** : Dual level scan selection
( )	**Necessary Option Code**
[ ]	**Selectable Option Code**

Program & End

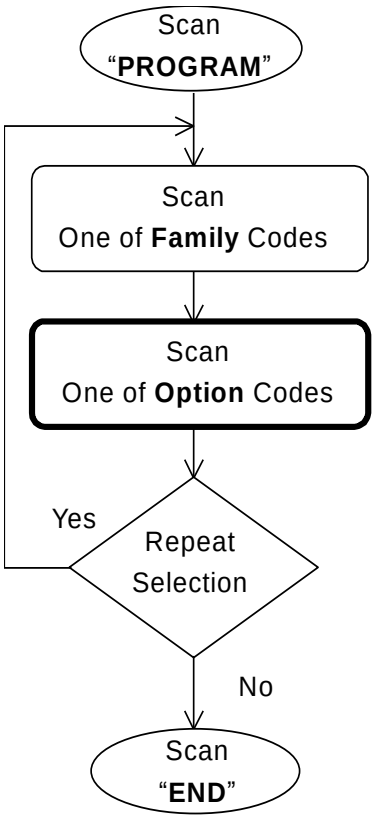


Please note that the FuzzyScan will take 3-4 seconds to store parameters in internal Flash Memory ASIC or non-volatile memory after you scan the “**END**”. Please **don’t** turn off the power before the completion beeping. It may destroy all configured parameters.

System List, Group & Master Default



Single scan selection



Enter programming mode.

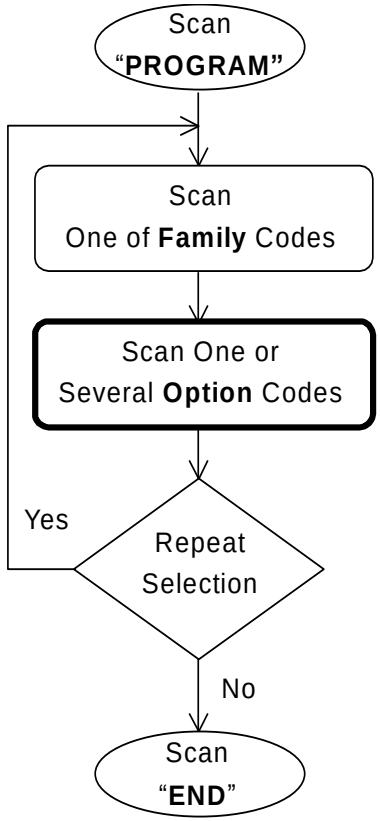
Select one of desired programming families.

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.

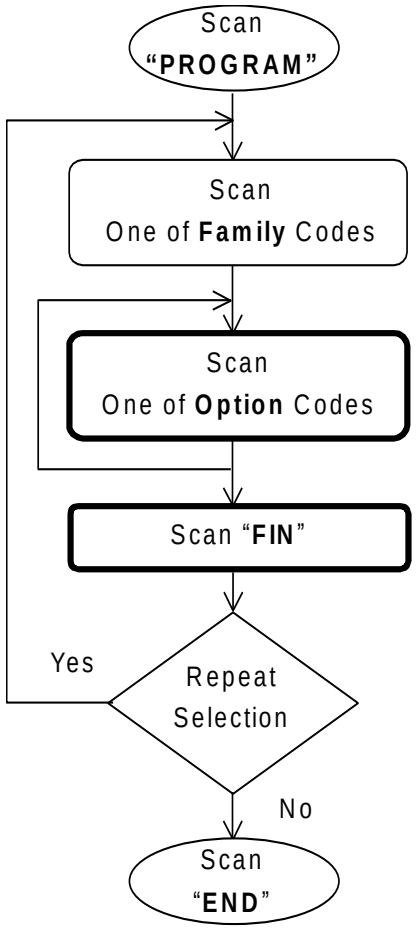
1. Select one or several option codes to select desired parameters.

2. If it’s necessary, scan “FIN” to terminate option code selection.

Want to select another programming family?

Exit programming mode.

Cycling scan selection



Enter programming mode.

Select one of desired programming families.

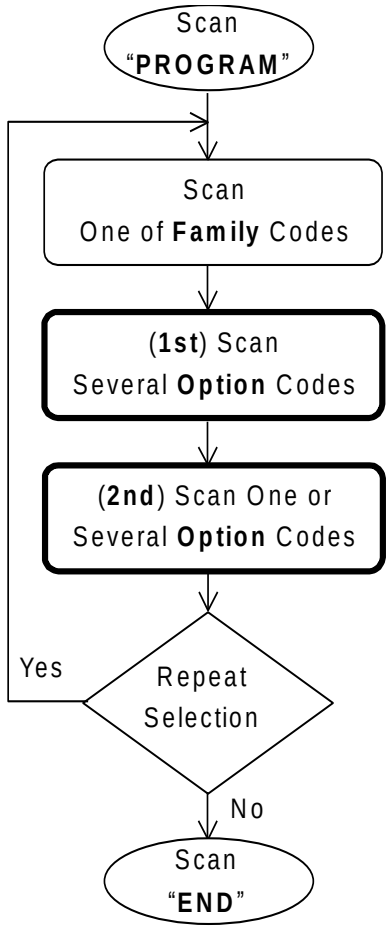
Cycling select one or several option codes of desired parameters as "Single" or "Multiple" scans selection.

Finish cycling selection.
(If necessary)

Want to select another programming family?

Exit programming mode.

Dual level selection



Enter programming mode.

Select one of desired programming families.

Select several option codes of desired parameters.

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

Want to select another programming family?

Exit programming mode.

Host Interface Selection

PROGRAM

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Host Interface Selection	MS	IBM PS/2, 25-30 series keyboard wedge interface	02
	MS	Standard/TTL RS-232 peer-to-peer serial	06
	MS	Wand emulation	08
	MS	USB Com Port Emulation	09
	MS	PS/2 (DOS/V) direct link (keyboard replacement)	10
	MS	PS/2 (DOS/V) keyboard wedge turbo mode	13
	MS	PS/2 (DOS/V) keyboard wedge standard mode	14
	MS	Laser emulation	17
	MS	USB HID standard mode ◆	18
	MS	USB HID turbo mode	19
	MS	USB HID Legacy	20
	MS	USB EFT Terminal Mode	21

▪ ***A series*** doesn't support Wand emulation, Laser emulation, USB HID Legacy and USB EFT Terminal Mode.

PROGRAM

Symbology Reading Control

♦ User Defined Symbol ID ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ User Defined Symbol ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ Symbology ID Transmission ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ Readable Bar Code Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Readable Symbology Setting	**SS**	Auto ◆	00
	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 Bar Code Setting ♦

F_DEFAULT

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

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

PROGRAM

Symbology Reading Control

♦ Code 39/Code 32 Setting ♦

F_DEFAULT

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

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

PROGRAM

Symbology Reading Control

♦ Code 39 Setting ♦

F_DEFAULT

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 bar codes:

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

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

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

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

PROGRAM

Symbology Reading Control

♦ Codabar/NW-7 Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Codabar Setting	SS	Disable Codabar	0
	SS	Enable Codabar ◆	1
	SS	Select Codabar standard format ◆	2
	SS	Select Codabar ABC format	3
	SS	Select Codabar CLSI format	4
	SS	Select Codabar CX format	5
	SS	Disable start/stop symbol transmission ◆	6
	SS	Enable ABCD/ABCD start/stop symbol transmission	7
	SS	Enable abcd/abcd start/stop symbol transmission	8
	SS	Enable ABCD/TN*E start/stop symbol transmission	9
	SS	Enable abcd/tn*e start/stop symbol transmission	A
	SS	Disable check digit verification ◆	B
	SS	Enable check digit verification	C
	SS	Disable check digit transmission ◆	D
	SS	Enable check digit transmission	E
Codabar Check Digit Settings	SS	Modulus 16 ◆	0
	SS	Modulus 10/weight 3	1
	SS	Modulus 11	2
	SS	Modulus 10/weight 2	3
	SS	7 check DR	4
	SS	Weight Modulus 11	5
	SS	Runes (Modulus 10/weight 2)	6
Codabar Min. Length	SS	Default (04) ◆	**FIN**
	MS	01-Maximum	**(2 digits)**
		Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	

PROGRAM

Symbology Reading Control

♦ Codabar/NW-7 Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Codabar Max. Length	SS **MS**	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**

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Wireless FuzzyScan Reference Manual

PROGRAM

Symbology Reading Control

♦ UPC-A & UPC-E Setting ♦

F_DEFAULT

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

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

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

PROGRAM

Symbology Reading Control

♦ UPC-A & UPC-E Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
UPC Supplement Setting	SS	Select UPC without supplement digits ◆		0	
	SS	Select UPC with only 2 supplement digits		1	
	SS	Select UPC with only 5 supplement digits		2	
	SS	Select UPC with 2/5 supplement digits		3	
	SS	Disable force supplement digits output ◆		4	
	SS	Enable force supplement digits output		5	
	SS	UPC Family Addenda Separator Off ◆		6	
	SS	UPC Family Addenda Separator On		7	
UPC/EAN Security Level	SS	Level 0		0	
	SS	Level 1 ◆		1	
	SS	Level 2		2	
		Only available for UPC-A & EAN-13			
Supplement Scan Voting	SS	None	Level 7	0	7
	SS	Level 1	Level 8	1	8
	SS	Level 2	Level 9	2	9
	SS	Level 3 ◆	Level 10	3	A
	SS	Level 4	Level 11	4	B
	SS	Level 5	Level 12	5	C
	SS	Level 6	Level 13	6	D

- UPC/EAN Security Level
  The scanner offers three levels of decode security for UPC/EAN bar codes:
  - Level 0: If you are experiencing misread of poorly-printed or out-of-spec. bar codes, especially in characters 1, 2, 7, and 8 in level 1, please select level 0. Selection of this security level may significantly impair the decoding ability of the scanner.
  - Level 1: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding “in-spec” UPC/EAN bar codes.
  - Level 2: If you are experiencing misread of poorly-printed, soiled or damage bar codes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.
- 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	
EAN Setting	SS	Disable EAN-13		0	
	SS	Enable EAN-13 ◆		1	
	SS	Disable EAN-8		2	
	SS	Enable EAN-8 ◆		3	
	SS	Disable EAN-8 expansion ◆		4	
	SS	Enable EAN-8 expansion		5	
	SS	Disable EAN-13 check digit transmission		6	
	SS	Enable EAN-13 check digit transmission ◆		7	
	SS	Disable EAN-8 check digit transmission		8	
	SS	Enable EAN-8 check digit transmission ◆		9	
	SS	Disable ISBN/ISSN Conversion reading check ◆		A	
	SS	Enable ISBN/ISSN Conversion reading check		B	
EAN Supplement Setting	SS	Select EAN without supplement digits ◆		0	
	SS	Select EAN with only 2 supplement digits		1	
	SS	Select EAN with only 5 supplement digits		2	
	SS	Select EAN with 2/5 supplement digits		3	
	SS	Disable force supplement digits output ◆		4	
	SS	Enable force supplement digits output		5	
	SS	EAN Addenda Separator Off ◆		6	
	SS	EAN Addenda Separator On		7	
Supplement Scan Voting	SS	None	Level 7	0	7
	SS	Level 1	Level 8	1	8
	SS	Level 2	Level 9	2	9
	SS	Level 3 ◆	Level 10	3	A
	SS	Level 4	Level 11	4	B
	SS	Level 5	Level 12	5	C
	SS	Level 6	Level 13	6	D

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

PROGRAM

Symbology Reading Control

♦ EAN Setting ♦

F_DEFAULT

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

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

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

  Level 2: If you are experiencing misread of poorly-printed, soiled or damage bar codes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.

- EAN Supplement Control

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

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

PROGRAM

Symbology Reading Control

♦ UCC Coupon Extended Code Setting ♦

F_DEFAULT

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

▪ UCC Coupon Extended Code

When UCC coupon extended code function is enabled, scanner decodes UPC-A barcodes starting with digit “5”, EAN-13 barcodes starting with digit “99” and 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
IATA Setting	SS	Disable IATA ◆	0
	SS	Enable IATA	1
	SS	Select 15-digit fixed length IATA checking ◆	2
	SS	Select variable length IATA	3
	SS	Disable check digit verification ◆	4
	SS	Enable check digit automatic verification	5
	SS	Enable S/N checking digit verification only	6
	SS	Enable CPN checking digit verification only	7
	SS	Enable CPN, Airline and S/N check digit verification	8
	SS	Disable check digit transmission ◆	9
	SS	Enable check digit transmission	A
	SS	Disable start/stop symbol transmission ◆	B
	SS	Enable start/stop symbol transmission	C
Interleaved 2 of 5 Setting	SS	Disable Interleaved 2 of 5	0
	SS	Enable Interleaved 2 of 5 ◆	1
	SS	Select Interleaved 2 of 5 as primary format ◆	2
	SS	Select German Postal Code as primary format	3
	SS	No check character ◆	4
	SS	Validate USS check digit	5
	SS	Validate OPCC check digit	6
	SS	Disable check digit transmission ◆	7
	SS	Enable check digit transmission	8

PROGRAM

Symbology Reading Control

♦ Code 25 Family Setting ♦

F_DEFAULT

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

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

PROGRAM

Symbology Reading Control

♦ Code 11 & Code 93 Setting ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ MSI/Plessey Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
MSI/Plessey Setting	SS	Disable MSI/Plessy ◆	0
	SS	Enable MSI/Plessy	1
	SS	Select MOD 10 check digit ◆	2
	SS	Select MOD 10-10 check digit	3
	SS	Select MOD 11-10 check digit	4
	SS	Disable check digit transmission ◆	5
	SS	Enable check digit transmission	6
MSI/Plessey Min. Length	SS	Default (04) ◆	**FIN**
	MS	01-Maximum	**(2 digits)**
		Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	
MSI/Plessey Max. Length	SS	Default (98) ◆	**FIN**
	MS	98-Minimum	**(2 digits)**
		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
Code 128 Setting	SS SS SS SS	Disable Code 128 and GS1-128 Enable Code 128 and GS1-128 ◆ ISBT Concatenation Off ◆ ISBT Concatenation On	0 1 2 3
Code 128 Min. Length	SS **MS**	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**
Code 128 Max. Length	SS **MS**	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**
Code 128 Security Level	SS SS	Level 0 Level 1 ◆	0 1

▪ **Code 128 Security Level**

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

Level 0: If you are experiencing misread of poor-printed or out-of-spec. bar code 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." Code128 bar codes.

PROGRAM

Symbology Reading Control

♦ GS1-128 Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
GS1-128 Setting	SS SS	Disable GS1-128 Enable GS1-128 ◆	**0** **1**
GS1-128 Min. Length	SS **MS**	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**
GS1-128 Max. Length	SS **MS**	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**

PROGRAM

Symbology Reading Control

♦ UK/Plessey Setting ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ Telepen Setting ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ GS1 DataBar Setting ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ Composite Codes, Codablock F PDF417/MicroPDF417 & Setting ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ Code 16K & Code 49 Setting ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ QR Code Setting ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ Data Matrix Setting ♦

F_DEFAULT

11Family Code Selection	P.C	Parameter Selection	Option Code
Data Matrix Setting	SS	Disable Data Matrix	0
	SS	Enable Data Matrix ◆	1
	SS	Disable Data Matrix Inverse Reading	4
	SS	Enable Data Matrix Inverse Reading	5
	SS	Auto Detect Data Matrix Inverse Reading ◆	6
	SS	Disable Data Matrix Mirror Images	7
	SS	Enable Data Matrix Mirror Images	8
	SS	Auto Detect Data Matrix Mirror Images ◆	9
Data Matrix Min. Length	SS	Default (01) ◆	**FIN**
	MS	01-Maximum	**(4 digits)**
		Scan 4 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	
Data Matrix Max. Length	SS	Default (3116) ◆	**FIN**
	MS	3116-Minimum	**(4 digits)**
		Scan 4 digits from the option code chart in Appendix; then FuzzyScan will terminate this selection automatically.	
Small DM Code Reading	SS	Standard ◆	0
	SS	Level 1	1
	SS	Level 2	2

- **Small DM Code Reading:**
  When small DataMatrix code can't be read by 2D scanner, you can select "Level 1" or "Level 2" to improve the scanner's ability to read small DataMatrix code. The scanner's snappiness decreased when you select "Level 1" or "Level 2". The higher level will take longer time to read the small DataMatrix barcode.

- **Small DM Code Reading:**
  Available firmware: A770BT 1.00.04 and above; 2.00.07 and above
  A670BT 1.00.04 and above
  PA670BT 1.00.06 and above

PROGRAM

Symbology Reading Control

♦MaxiCode Setting ♦

F_DEFAULT

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

PROGRAM

Symbology Reading Control

♦ Aztec Code Setting ♦

F_DEFAULT

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

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

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

PROGRAM

Symbology Reading Control

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

F_DEFAULT

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

Keyboard Interface Control

♦ Keyboard Layout (Language) Setting ♦

PROGRAM

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Keyboard Layout	SS	USA (QWERTY) ◆	00
	SS	France (AZERTY)	01
	SS	Germany (QWERTZ)	02
	SS	United Kingdom - UK (QWERTY)	03
	SS	Canadian French (QWERTY)	04
	SS	Spain (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

- Please refer to the **ASCII/HEX Table** listed in the Appendix to determine HEX codes for characters, symbols, and functions to be used as preamble or postamble.
- To set preamble or postamble as function key output, you must enable the **"Function Key Emulation"** feature as listed in page 3-25 first.
- **Keyboard Interface Message String :**

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

PROGRAM

Keyboard Interface Control

♦ Record Suffix, Preamble, Postamble, FNC1 Transmit & Caps Lock ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Record Suffix	SS	None	0
	SS	RETURN ◆	1
	SS	TAB	2
	SS	SPACE	3
	SS	ENTER (Numeric Key Pad)	4
	SS	User defined character (1 character)	**5, (00-7F)**
Preamble	SS	None ◆	**FIN**
	MS	1-15 characters	**[00-7F], [FIN]**
		Maximum 15-character input; scan “FIN” to terminate this selection.	
Postamble	SS	None ◆	**FIN**
	MS	1-15 characters	**[00-7F], [FIN]**
		Maximum 15-character input; scan “FIN” to terminate this selection.	
FNC1 Symbol Char. Transmit	SS	Disable	0
	SS	Enable ◆	1
Caps Lock Control	SS	“Caps Lock Off” State ◆	0
	SS	“Caps Lock On” State	1
	SS	Auto Detect (PC/AT, PS/2, Keyboard Replacement and DOS/V Machines only)	2
Caps Lock Release Control	SS	“Caps Lock On, Caps Off” ◆	0
	SS	“Caps Lock On, Shift Off”	1

- **FNC1 Symbol Char. Transmit:** When this function is enabled and the FNC1 is contained in scanned data, the scanner transmits the FNC1 to the host. Chart of theFNC1 is provided in Appendix- Keyboard Function Code Table. When the scanner interface is set to keyboard, the scan code is converted to corresponding key function before it is transmitted.
- The function of "**Caps Lock Control**" and "**Key Pad Emulation**" are **only** available for IBM PC/AT, PS/VP, PS/2 series personal computers and compatible machines. While selecting the other host interfaces, these selections don't perform the above functions for you.
- Please check the **actual** Caps Lock state in use while software application is running. If the Caps Lock state is off, select "**Caps Lock Off**" state, then FuzzyScan will perform normal data transmission. If the Caps Lock state is on, select "**Caps Lock On**" state. Select "**Auto Detect**", FuzzyScan will perform special transmission handshaking without changing the status of Caps Lock switch.

Keyboard Interface Control

♦ Delay Setting ♦

PROGRAM

F_DEFAULT

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

- **Intermessage Delay** is a time delay between messages output by FuzzyScan. Increasing this delay will help host applications process the incoming data on time.
- **Intercharacter Delay** is a time delay between data characters output by FuzzyScan. This parameter is 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 this parameter
- **Interfunction Delay** is a time delay between the transmissions of each segment of the message string.
- **Intermessage Delay, Intercharacter Delay and Interfunction Delay** are unconfigurable under SPP and HID modes.

PROGRAM

Keyboard Interface Control

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

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Function Key Emulation	SS	Enable ASCII 00-31 code as keyboard function code output ◆	0
	SS	Ctrl-Output	1
		Refer to Appendix – Keyboard Function Code Table for details.	
Key Pad Emulation	SS	Disable key pad emulation ◆	0
	SS	Enable numeric output as key pad (Num Lock On) output	1
Upper/Lower Case	SS	Normal case (neglect the upper/lower case control) ◆	0
	SS	Inverse case (change all characters output to inverse case)	1
	SS	Upper case (force all characters output as upper case)	2
	SS	Lower case (force all characters output as lower case)	3
Dollar Sign Control	SS	Dollar sign output as " $ " ◆	0
	SS	Dollar sign output as "¥"	1
	SS	Dollar sign output as " € "	2
	SS	Dollar sign output as " £ "	3
	SS	Dollar sign output as " ¢ "	4

PROGRAM

Serial Interface Control

♦ Record Suffix, Preamble ,Postamble Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
STX/ETX Control	SS SS	Disable STX/ETX transmission ◆ Enable STX/ETX transmission	0 1
		STX/ETX are two characters used to indicate the starting and ending of the total data frame transmitted via serial interface.	
Record Suffix	SS SS SS SS SS SS **MS**	None CR (0DH) ◆ LF (0AH) CRLF (0D0AH) TAB (09H) SPACE (20H) User defined character (1 character)	0 1 2 3 4 5 **6, (00-7F)**
Preamble	SS **MS**	None ◆ 1-15 characters	**FIN** **[00-7F], [FIN]**
		Maximum 15-character input; scan “FIN” to terminate this selection.	
Postamble	SS **MS**	None ◆ 1-15 characters	**FIN** **[00-7F], [FIN]**
		Maximum 15-character input; scan “FIN” to terminate this selection.	
FNC1 Symbol Char. Transmit	SS SS	Disable Enable ◆	0 1
		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	

▪ **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
Intermessage Delay	SS **MS**	None ◆ 1-99 (x10) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**
Intercharacter Delay	SS **MS**	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**
Interfunction Delay	SS **MS**	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**FIN** **(2 digits)**

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

PROGRAM

Serial Interface Control

♦ Protocol, ACK/NAK Setting ♦

F_DEFAULT

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

  ACK/NAK handshaking protocol is workable under following conditions:

  1) Pair mode by using RS232 or USB COM interface.

  2) SPP master or slave mode.
- **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

♦Time Out Setting, Baud Rate, Data Frame ♦

F_DEFAULT

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

- 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

Wand/Laser Emulation Control (*F, L, PF & PL*)

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

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Output Polarity	SS	High level (5Vdc) on Bar (low level on Space) ◆	0
	SS	Low level (0Vdc) on Bar (high level on Space)	1
		Determine the output voltage level for both bar and space.	
Initial Signal State	SS	High Level (5Vdc) ◆	0
	SS	Low Level (0Vdc)	1
		Determine the initial state of output voltage level.	
Margin Time	SS	10 msec.	0
	SS	15 msec.	1
	SS	20 msec. ◆	2
	SS	25 msec.	3
	SS	30 msec.	4
Module Time	SS	Extremely short	0
	SS	Short	1
	SS	Medium ◆	2
	SS	Long	3
Narrow/Wide Ratio	SS	1:2 ◆	0
	SS	1:2.5	1
	SS	1:3	2

PROGRAM

Wand/Laser Emulation Control
(F, L, PF, PL & PA Series)

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

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 39/Code 128 Emulation	SS	Disable standard Code 39 emulation ◆	0
	SS	Enable standard Code 39 skip emulation	1
	SS	Enable standard Code 39 replace emulation	2
	SS	Enable Full ASCII Code 39 emulation	3
	SS	Enable Code 128 emulation	4

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

PROGRAM

Operation Control

♦ Operation Mode ♦

F_DEFAULT

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

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

PROGRAM

Operation Control
(A Series & PA Series)
♦ Batch Reading ♦

F_DEFAULT

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

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

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

▪ **Batch Reading Rule**:

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

- **[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/Suffi Symbol ID OR AIM ID if you had defined. **FF** is the universal character, indicating all characters.

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

B-CODE39

A-CODE128

C-CODE93

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

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

The breakdown of the command line is shown below:

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

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

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

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

The breakdown of the command line is shown below:

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

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

- Structure of **Data String**

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

PROGRAM

Operation Control
(All Series)

♦ Buzzer, Indicator, Vibrator, 1D Code Inverse Reading ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Buzzer Tone Adjust	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 / power-off beep ◆	5
	SS	No power-on / power-off beep	6
Power On Indicator	SS	Disable (LED off)	0
	SS	LED steady on ◆	1
	SS	LED flash	2
Good Read Indicator	SS	Disable	0
	SS	Enable ◆	1
Vibrator Control	SS	Disable	0
	SS	Enable ◆	1
		Optional function, only available for vibrator model.	
1D Barcode Inverse Reading	SS	Disable ◆	0
	SS	Enable	1

PROGRAM

Operation Control
(All Series)

♦ **Beeping Control, Radio connection Beeps** ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Beeping Control	SS	Radio Connected/ Disconnected Beep On ◆	0
	SS	Radio Connected/ Disconnected Beep Off	1
	SS	Battery Power Low Beep On ◆	2
	SS	Battery Power Low Beep Off	3
Radio Connection Beeps	SS	Four ascending tone / Four descending tone ◆	0
	SS	Low-high two beeps / High-low two beeps	1

PROGRAM

Operation Control
(A Series & PA Series)

♦ Buzzer Volume ♦

F_DEFAULT

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

- Available firmware: A770BT 1.00.13 and above; 2.00.03 and above
  A670BT 1.00.01 and above
  PA670BT 1.00.01 and above

PROGRAM

Operation Control
(A Series & PA Series)
♦ Timestamp Functions – Set Date, Set Time, Timestamp Format Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Set Date	SS	Scan Date (MMDDYY) For example, 2014-12-24, set 122414	**6 digits + END**
Set Time	SS	Set Time (HHMM) For example, for 24-hour clock Time Conversion, 14:56 set 1456	**4 digits + END**
Timestamp Format Setting	SS	HH:MM DD/MM/YYYY	0
	SS	HH:MM MM/DD/YYYY◆	1
	SS	HH:MM YYYY/MM/DD	2
	SS	HH:MM:SS DD/MM/YYYY	3
	SS	HH:MM:SS MM/DD/YYYY	4
	SS	HH:MM:SS YYYY/MM/DD	5
	SS	DD/MM/YYYY HH:MM	6
	SS	MM/DD/YYYY HH:MM	7
	SS	YYYY/MM/DD HH:MM	8
	SS	DD/MM/YYYY HH:MM:SS	9
	SS	MM/DD/YYYY HH:MM:SS	10
	SS	YYYY/MM/DD HH:MM:SS	11
	SS	DD/MM/YYYY	12
	SS	MM/DD/YYYY	13
	SS	YYYY/MM/DD	14
	SS	HH:MM	15
	SS	HH:MM:SS	16

PROGRAM

Operation Control
(A Series & PA Series)

F_DEFAULT

♦ Timestamp Functions – Date & Time Format Setting, Timestamp Output Control, Stored Data Output Format, Online Mode Output Format♦

Family Code Selection	P.C	Parameter Selection	Option Code
Date & Time Format Setting	SS	12 hour	0
	SS	24 hour ◆	1
	SS	Short Year (YY)	2
	SS	Full Year (YYYY) ◆	3
Timestamp Output Control	SS	None ◆	0
	SS	Batch mode	1
	SS	Online mode	2
	SS	Online mode & Batch mode	3
Stored Data Output Format	SS	Data/Record ◆	0
	SS	Quantity + Data/Record	1
	SS	Data/Record + Quantity	2
	SS	Timestamp + Data/Record	3
	SS	Data/Record + Timestamp	4
	SS	Timestamp + Quantity + Data/Record	5
	SS	Timestamp + Data/Record + Quantity	6
	SS	Quantity + Timestamp + Data/Record	7
	SS	Quantity + Data/Record + Timestamp	8
	SS	Data/Record + Timestamp + Quantity	9
	SS	Data/Record + Quantity + Timestamp	10
Online Mode Output Format	SS	Data/Record ◆	0
	SS	Timestamp + Data/Record	1
	SS	Data/Record + Timestamp	2

▪ **Timestamp Function** is available for both **Online Mode** and **Batch Mode**.

PROGRAM

Operation Control
(PF, PL &PA Series)
♦ Radio Link Mode for Discoverable Mode ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Radio Link Mode for Discoverable Mode	SS	HID Mode ◆	0
	SS	HID Mode with Passkey	1
	SS	HID Legacy Mode	2
	SS	SPP Slave Mode	3
		You may also press FN1 of pocket scanner for more than 3 seconds to enter discoverable mode.	

PROGRAM

Operation Control
(All Series)
♦Redundancy♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Redundancy	SS	None	0
	SS	Level 1 ◆	1
	SS	Level 2	2
	SS	Level 3	3
	SS	Level 4	4
	SS	Level 5	5
		To prevent potential miss reading.	

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

PROGRAM

Operation Control
(All Series)

♦ Delay Setting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Reread Delay (Double Scan Verification)	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
Good Read Delay	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
HID Mode Transmit Delay	SS	None ◆	**FIN**
	MS	1-250 msec. Scan 3 digits from the option code chart in Appendix, then FuzzyScan will terminate this selection automatically.	**(3 digits)**

- The **Reread Delay (Double Scan Verification)** is designed to inhibit FuzzyScan from reading the same bar code label twice in pre-defined short duration. Force Verification will not allow reading of the same bar code twice.
- This **Good Read Delay** is the minimum amount of time before the scanner can read another bar code.
- This **HID Mode Transmit Delay** will affect HID mode; When the scanner pairs with the Android, set this to 70ms to avoid data loss.

PROGRAM

Operation Control
(All Series)

♦ Time-out Setting, Good Read Duration ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Light Source On Time	SS	Short	0
	SS	Medium	1
	SS	Long ◆	2
	SS	Extremely long	3
Hands Free Time-out	SS	Short ◆	0
	SS	Medium	1
	SS	Long	2
	SS	Extremely long	3
	SS	Disable	4
Good Read Duration	SS	Short	0
	SS	Medium ◆	1
	SS	Long	2
	SS	Extremely long	3
	SS	Extremely short	4
Time Delay to Low Power Standby Mode	SS	1 sec	0
	SS	3 secs	1
	SS	5 secs ◆	2
	SS	7 secs	3
	SS	9 secs	4
	SS	Immediate	5
Low Power Standby mode Link Indication	SS	Turn off immediately	0
	SS	Last for 1 minute ◆	1
	SS	Keep on till power-off	2

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

☐

- The **Time Delay to Low Power Standby Mode** sets the time for scanner to enter low power trigger mode after any scanning activity.
- Use **Good Read Duration (Good Read Beep and Vibration Duration)** to define beeps and vibration according to operator preference and work environment.

PROGRAM

Operation Control
(All Series)
♦ Presentation Scanning Setting♦

F_DEFAULT

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

- When enable the **Presentation Auto-sense,** the scanner can be switched between hands free scanning and hand-held scanning automatically when working with the SmartStand or cradle.
- The **Presentation Sensitivity** is used to configure the sensitivity level when the scanner is set as presentation mode. The higher lever means higher sensitivity for detecting the barcode.

PROGRAM

Operation Control
(F, L, PF & PL Series)
♦ Scan Rate Control, ♦

F_DEFAULT

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

- **Scan Rate Control**: The scanner will have better motion tolerance when you select “Fixed” scan rate. It’s suitable for application which needs higher motion tolerance on the move. But this may impact to the reading distance.

PROGRAM

Operation Control
(L & PL Series)

♦ **Smart stand Power Off Timeout, Laser Aiming Control, LED Illumination Control** ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
SmartStand Power Off Timeout	SS	3 mins ◆	0
	SS	5 mins	1
	SS	10 mins	2
		Only available for FuzzyScan L series scanners.	
Laser Aiming Control	SS	Disable	0
	SS	Enable ◆	1
LED Illumination Control	SS	Always on	0
	SS	Intelligent Mode ◆	1
LED Illumination Delay	SS	100 ms	0
	SS	150 ms ◆	1
	SS	200 ms	2
	SS	250 ms	3
	SS	300 ms	4

- **The SmartStand Power Off Timeout** is a pre-defined duration for scanner's light source on time when the scanner is placed on SmartStand. While the scanner is placed on SmartStand, the scanner will be switched from hand-held scanning to presentation scanning and the light source will be forced on automatically. The light source will be off when the pre-defined duration is up.
- **Laser Aiming Control**: You can disable or enable laser aiming line when you scan **PDF barcode.**
- **LED Illumination Control: When you enable "always on", the LED illumination will be always on when you press the trigger. When you enable "intelligent mode", the scanner will emit the laser aiming line first, the LED illumination will be turned on after the preset LED illumination delay. Intelligent mode is recommended to be used in regular ambient light environment.**

Operation Control
(A Series & PA Series)

PROGRAM

♦ Aiming Control, Delay Aiming & Decode Aiming Control ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
Illumination Control	SS	Disable		0	
	SS	Enable ◆		1	
Presentation Background Lighting	SS	LEDs Off		0	
	SS	LEDs On ◆		1	
Aiming Control	SS	Regular Aiming ◆		0	
	SS	Intelligent Aiming		1	
	SS	Delay Aiming Control		2	
Delay Aiming Time-out Control	SS	200 ms	1.5 secs.	0	4
	SS	400 ms ◆	2 secs.	1	5
	SS	800 ms	3 secs.	2	6
	SS	1 sec	4 secs.	3	7
Decode Aiming Control	SS	Disable in Hand-Held mode		0	
	SS	Enable in Hand-Held mode ◆		1	
	SS	Disable in Hand-Free mode		2	
	SS	Enable in Hand-Free mode ◆		3	

- The **Illumination Control** is only available for hand-held mode.
- **Presentation Background Lighting Control:** You can enable or disable presentation background lighting of the scanner according to the ambient light condition in presentation mode. When the ambient light is dim or dark, you can enable this function to turn on the scanner's LED illumination at a dim level. This is helpful for scanner to detect the motion of scene.
- The **Aiming Control** is only available for trigger mode. In Intelligent Aiming, the aiming light is turned on when the scanner is lifted. A trigger pull activates decoding process. After 2 seconds of inactivity, the aiming light will be shut off. Delay Aiming Control allows a delay time for the operator to aim the scanner before the image is taken. During the delay time, the aiming light will be on, but the LED illumination won't be turned on until the delay time is up.
- The **Delay Aiming Time-out Control** is only available for trigger mode. You can use Delay Aiming Time-out Control to set the delay time.

PROGRAM

Operation Control
(A Series & PA Series)
♦ Center Alignment, Unique Bar Code Reporting ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Center Alignment	SS	Disable in Hand-Held Mode ◆	0
	SS	Enable in Hand-Held Mode	1
	SS	Disable in Hand-Free Mode ◆	2
	SS	Enable in Hand-free Mode	3
Unique Bar Code Reporting	SS	Disable ◆	0
	SS	Enable	1

- **Center Alignment:** When this function is enabled, the scanner only decodes barcode(s) around aiming line.
- **Unique Bar Code Reporting:** When this function is enabled, the scanner only outputs unique barcode when the trigger is pressed. This function is workable when **Multiple Read mode** is selected.

PROGRAM

Operation Control
(All Series)

♦ **Out-of-range Scanning, Link Supervision Time-out** ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Out-of-range Scanning	SS SS	Disable ◆ Enable	0 1

▪ **Out-of-range Scanning** - When radio link is built between the scanner and remote host device, the scanner will transmit each scanned data right after scanning the barcode data. However, the scanner is preset for unable to scan any barcode data when it loses the radio connection. You can enable the Out-of-range Scanning function to continue scanning barcode data into memory buffer until radio link resumed.

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PROGRAM

Operation Control
(All Series)

F_DEFAULT

♦Radio-off Time-out Control, Power Off Time-out Control ♦

Family Code Selection	P.C	Parameter Selection	Option Code
Radio-off Time-out - Connect State	SS **MS**	12 (x5) minutes ◆ 0-99 (x5) minutes If you don't want the scanner to enter power-off, please set time-out to "**0**"	**FIN (2 digits)**
Radio-off Time-out - Disconnect State	SS **MS**	5 (x1) minute ◆ 0-99 (x1) minutes If you don't want the scanner to enter power-off, please set time-out to "**0**"	**FIN (2 digits)**
Power Off Time-out	SS **MS**	1 (x5) minutes ◆ 0-99 (x5) minutes If you want the scanner to enter power off mode immediately, please set time-out to "**0**"	**FIN (2 digits)**

- The **Radio-off Time-out Control** can be set under radio connection or disconnection state. If the scanner is not used within the preset time-out duration, it will automatically enter "Power Off" for power saving purpose. You are able to disable this function by setting the time-out duration to "0".
- The **Power Off Time-out:** When the scanner is under radio-off, it is preset to enter Power Off automatically if the radio is not on after the time-out duration. If you would like to power on the scanner, please press the trigger button. You can have the scanner enter this function immediately by setting the time-out duration to "0"
- Above behavior (revised from Programming Manual rev. C7) is available for firmware
  F680BT, F780BT, L680BT, L780BT: 3.01.09 and above; 4.00.06 and above
  A770BT: 1.00.15 and above, 2.00.04 and above
  A670BT: 1.00.01 and above
  PF/ PL680BT: 1.00.06 and above
  PA670BT: 1.00.02 and above

PROGRAM

Operation Control
(All Series)
♦ Batch Scanning Setting ♦

F_DEFAULT

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

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

PROGRAM

Operation Control
(All Series)

F_DEFAULT

♦ Batch Scanning Data Transmission Setting ♦

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

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

PROGRAM

Operation Control
(All Series)

F_DEFAULT

♦ Bluetooth Device Name & Security Setting♦

Family Code Selection	P.C	Parameter Selection	Option Code
Bluetooth Device Name	SS **MS**	Default device name ◆ User define; F/L series: 1-16 characters A series: 1-32 characters	**FIN** **[00-7F], FIN**
Bluetooth PIN Code	SS **MS**	Default Bluetooth PIN Code◆ User define, 1-8 numbers	**FIN** **[30-39], FIN**
Bluetooth Authentication	SS SS	Disable Enable ◆	0 1

- The default **Bluetooth Device Name** for **F/L series** is “F(L)xxxBT-xxxx”, and for **PF/PL series** is PF(L)xxxBT-xxxx, you will be able to change the device name by scanning HEX values (1-16 characters).
- The default **Bluetooth Device Name** for **A series** is “AxxxBT-xxxx”, you will be able to change the device name by scanning HEX values (1-32 characters).
- The default **Bluetooth PIN Code** is “00000000”, you will be able to change the PIN Code by scanning HEX values (1-8 numbers).
- The **Bluetooth Authentication** You can enable or disable the Bluetooth Authentication between the scanner and remote host device. If this function is enabled, when the scanner wants to connect itself and sends the data to the host device, the host device has to return a link key shared between the scanner and the host device.

PROGRAM

Operation Control

♦ Bluetooth Other Settings ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Bluetooth Sniff Control	SS	Disable	0
	SS	Enable ◆	1
Link Quality Control	SS	Disable ◆	0
	SS	Level 1	1
	SS	Level 2	2
	SS	Level 3	3
	SS	Level 4	4

- The **Bluetooth Sniff Control** Bluetooth module will enter low power consumption mode when you enable this function.
- **Link Quality Control**: This function is only available for SPP and HID mode. When you use the scanner in the boundary of radio signal, you can enable this function to increase the reliability of data transmission. But this function will affect the communication distance. The level is higher, the communication distance is shorter.

PROGRAM

Operation Control
(All Series)
♦On-screen Keyboard Control ♦

F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
On-screen Keyboard Control	SS	Disable	0
	SS	Enable ◆	1

- When On-screen Keyboard Control is **enabled**, the scanner is preset to switch between barcode scanning and on-screen keyboard of **most popular devices**; you also can have the scanner entered this setting by scanning "**General Approach** " quick set command. Then you can turn off the radio to activate the on-screen keyboard by scanning "Switch On-screen Keyboard" quick set command. If you use pocket scanner, you can activate the on-screen keyboard toggle by short pressing the **FN1**.
- To work with **iOS device**, please change On-screen Keyboard Control to **disable**, or scan the "**iOS Approach**" quick set command to activate this function. Then you can scan ""Switch On-screen Keyboard" quick set command to toggle the iOS on-screen keyboard. If you use pocket scanner, you can also activate the iOS on-screen keyboard toggle by short pressing the **FN1**.
- When you finished the keyboard input, please press the trigger once to turn on the radio, and the on-screen keyboard will be inactivated.

PROGRAM

Condensed DataWizard

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

F_DEFAULT

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

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

PROGRAM

Condensed DataWizard

♦ Data Formatter Setting ♦

F_DEFAULT

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

- The **Data Formatter** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for formatter control, and provides **Multiple Position Insertion** and **Multiple Character Insertion** (max three characters) in the identified position.
- While the Data Formatter is enabled, it arranges only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbolology ID** or **Record Suffix**. All of the above programmable parameters perform the same function depending on your setting.
- Regarding the "**Bar Code Selection**" and "**Position Calculation**" of data formatter, please refer to page 60 for details.
- Please note that all "**Character**" input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.

PROGRAM

Condensed DataWizard

♦ Data Verifier Setting ♦

F_DEFAULT

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

- The **Data Verifier** is used to provide advanced verification for error-free scanning and to work as an **Embedded Data Transmitting Filter**.
- All data must conform to the **Identified Bar Code Symbologies**, **Identified Data Length**, and one to three **Identified Characters** in the checking position. Otherwise, the FuzzyScan will not transmit the data to the host computers or terminals, but will instead issue **3 long beeps** for verification error and **skip** the scanned data.
- The Data Verifier checks only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the "**Bar Code Selection**" and "**Position Calculation**" of **Data Verifier**, please refer to page 60 for details.
- Please note that all "**Character**" input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.

PROGRAM

Condensed DataWizard

♦ Data Replacer Setting ♦

F_DEFAULT

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

- The **Data Replacer** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for replacer control, and provides **Multiple Position Replacement** in the identified position.
- All data must conform to the **Identified Bar Code Symbologies**, and one to three **Identified Characters** in the identified position while the Data Replacer is enabled, it arranges only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the "**Bar Code Selection**" and "**Position Calculation**" of Data Replacer, please refer to page 60 for details.
- Please note that all "**Character**" input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.

PROGRAM

Condensed DataWizard

♦ Data Organizer Setting ♦

F_DEFAULT

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

- The **Data Organizer** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for organizer control, and provides maximum two identified positions to send the data **forward** or **backward**. It also allows you to control the transmitted data **including** or **excluding** the data of identification position. Please refer to the application example listed in page 60 for details.
- While the Data Organizer is enabled, it arranges only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the "**Bar Code Selection**" and "**Position Calculation**" of Data Organizer, please refer to page 60 for details.
- Please note that all "**Character**" input should be referred to the **ASCII/HEX Table**.

Select a Bar Code Symbology

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

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

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

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

Position Calculation

[Data Formatter]

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

	X		X		X		X		X	
00		01		02		03		04		05

[Data Verifier, Data Replacer, Data Organizer]

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

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

Application Example

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

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

Actual Output : A81025[TAB]SN123456[TAB]76[TAB]

Programming Procedure

[Data Verifier]

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

[Data Formatter]

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

[Data Replacer]

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

[Data Organizer]

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

[Important Notice]

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

Verifier ⏩ Formatter ⏩ Replacer ⏩ Organizer

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

Symbology ID Table

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

Code Family	Primary Format	Cino ID		AIM ID		Code Family	Primary Format	Cino ID		AIM ID	
		Hex value	Code Character	Code Character	Modified Character			Code Character	Code Character	Code Character	Modified Character
UPC	UPC-A	2	A	E	0	EAN/JAN	EAN/JAN-8	05	N	E	4
	UPC-A with 2 supple.	32			1		EAN/JAN-8 with 2 supple.	35			1
	UPC-A with 5 supple.	42			2		EAN/JAN-8 with 5 supple.	45			2
	UPC-E	3	E		0		EAN/JAN-13	04	F	E	0
	UPC-E with 2 supple.	33			1		EAN/JAN-13 with 2 supple.	34			1
	UPC-E with 5 supple.	43			2		EAN/JAN-13 with 5 supple.	44			2
	Example: A UPC-A bar code 012345678950 with 2 supplement 12 is transmitted as **]E0**012345678950**]E1**12						Example: A EAN/JAN-8 bar code 49123562 with 5 supplement 12345 is transmitted as **]E4**49123562**]E2**12345				
Code 128	Code 128	01	B	C	m	Code 93	Code 93	09	H	G	m
	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	Compsoite	Composite Code	24			
	German Postal Code	68	M	I	m	Code 39	Code 39	07	G	A	m
IATA	IATA	15	O	R	m		Code 39 Trioptic	47	W	X	0
							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 bar code is transmitted as**]E0**512345678900**]C1**81010123451297 Example: A EAN-13 9923456789019 + GS1-128 81010123451297 bar code is transmitted as **]E0**9923456789019**]C1**81010123451297					Codablock	Codablock F	18	Y	O	m
						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									
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	Ctrl Output	No.	ANSI	ASCII	Key Function	Ctrl Output
00	NUL	00H	RESERVED	Ctrl + @	16	DLE	10H	F7	Ctrl + P
01	SOH	01H	CTRL (Left)	Ctrl + A	17	DC1	11H	F8	Ctrl + Q
02	STX	02H	ALT (Left)	Ctrl + B	18	DC2	12H	F9	Ctrl + R
03	ETX	03H	SHIFT	Ctrl + C	19	DC3	13H	F10	Ctrl + S
04	EOT	04H	CAPS LOCK	Ctrl + D	20	DC4	14H	F11	Ctrl + T
05	ENQ	05H	NUM LOCK	Ctrl + E	21	NAK	15H	F12	Ctrl + U
06	ACK	06H	ESC	Ctrl + F	22	SYN	16H	INS (Insert) (Edit)	Ctrl + V
07	BEL	07H	F1	Ctrl + G	23	ETB	17H	DEL (Delete) (Edit)	Ctrl + W
08	BS	08H	BACK SPACE	Ctrl + H	24	CAN	18H	HOME (Edit)	Ctrl + X
09	HT	09H	TAB	Ctrl + I	25	EM	19H	END (Edit)	Ctrl + Y
10	LF	0AH	F2	Ctrl + J	26	SUB	1AH	PAGE UP (Edit)	Ctrl + Z
11	VT	0BH	F3	Ctrl + K	27	ESC	1BH	PAGE DOWN (Edit)	Ctrl + [
12	FF	0CH	F4	Ctrl + L	28	FS	1CH	UP (Edit)	Ctrl + \
13	CR	0DH	ENTER (CR)	Ctrl + M	29	GS	1DH	DOWN (Edit)	Ctrl +]
14	SO	0EH	F5	Ctrl + N	30	RS	1EH	LEFT (Edit)	Ctrl + 6
15	SI	0FH	F6	Ctrl + O	31	US	1FH	RIGHT (Edit)	*see below note

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

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

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

ASCII Input Shortcut

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

Example:

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

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

HEX/ASCII Reference Table

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

Example: ASCII "A" → HEX "41"; ASCII "a" → "61"

: High Byte of HEX Value

: Low Byte of HEX Value

Link Mode Quick Set

PAIR Mode

Uninstall

PICO Mode

SPP Master Mode

SPP Slave Mode

HID Mode

HID Legacy Mode

HID Mode with Passkey

Host Interface Quick Set

(Work with Smart Cradle only)

USB HID Standard Mode ◆

RS232 Serial

PS/2 (DOS/V) KBW Standard Mode

USB HID Turbo Mode

USB Com Port Emulation

PS/2 (DOS/V) KBW Turbo Mode

USB HID Legacy Mode

PS/2 (DOS/V) Keyboard Replacement

Option Codes

0

4

8

C

1

5

9

D

2

6

A

E

3

7

B

F

FIN (Finish)

Abort

END (Exit)

Toggle between Barcode scanning and On-screen keyboard of mobile devices

General Approach ◆

iOS Approach

Switch On-screen Keyboard

Available for FuzzyScan Bluetooth Cordless Scanner:

One of following Bluetooth scanners with proper firmware preload:

λ Bluetooth Image Scanners

F680BT / F780BT :	Rev. 4.00.05 and above
L680BT / L780BT:	Rev. 4.00.05 and above
A670BT :	Rev. 1.00.01 and above
A770BT :	Rev. 1.00.14 and above
	Rev. 2.00.02 and above

λ Bluetooth Pocket Scanners:

PF680BT / PL680BT :	Rev. 1.00.05 and above
PA670BT :	Rev. 1.00.01 and above

Please refer to P.20 “Toggle between Barcode Scanning and On-screen Keyboard Input” for more details.

System Commands

PROGRAM
(Enter Programming Mode)

Paging

Save Configuration

FIN (Finish)

PowerTool Host Link

Clone

END
(Exit Programming Mode)

Power Off

Factory Default

System Information List
(SYSLIST)

Master Default

□

- **Factory Default:** After scanning" Factory Default" command, all parameters will be returned to factory default value (The radio link will be disconnected and the scanner will revert to uninstall state).
- **Master Default:** After scanning "Master Default" command, the scanner will remain the pre-set parameters of **Host Interface Selection**, **Keyboard Interface Control** (except Record Suffix; Preamble; Postamble), **Serial Interface Control** (except Record Suffix; Preamble; Postamble), **Wand/Laser Emulation Control**, **Bluetooth Device Name**, **Bluetooth PIN Code**, and **Out-of-range Scanning**, the rest of parameters will be returned to default value (The radio link is still keep on).

Save User Default

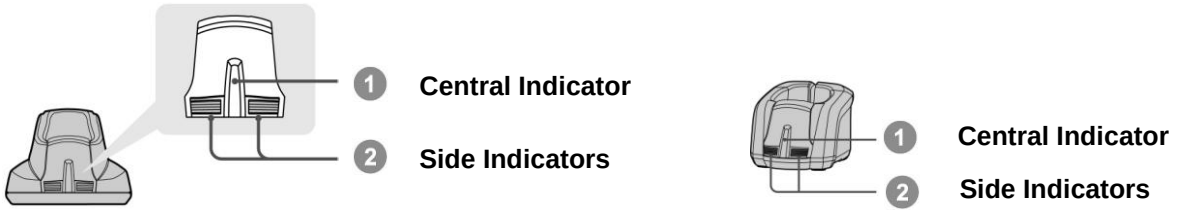
User Default

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

Indications

Scanner Indication

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



HB211x / HB3112 Smart Cradle Indications

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

HB2100 Charging Cradle Indication

Items	Central Indicator	Beeping
Power on	Light blue	Off

FuzzyScan Bluetooth Scanner Programming Manual

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