

XL-868
Portable IOT Terminal
User Manual

V1.1

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Annoucement

Please do read this manual carefully before using this product to ensure the safe and effective use. After reading, please keep it appropriately for next query.

Do not disassemble the product or tear up the label, otherwise, we will not be responsible for the warranty or replacement.

The pictures in the manual are only for reference. If any difference with the actual product, please subject to the actual product. Regarding the update or improvement of this product, we reserves the right to modify the document without notice.

Products described in this manual may contain third-party software. Without the permission, it can not be transferred.

We reserves the final interpretation for this product.

1. Product List

- 1). XL-868 IOT Portable Data Terminal
- 2). Power adaptor 5VDC (Compatible with standard USB)
- 3). Battery (4200mAH) one (optional two)
- 4). Mifare one test card (optional)
- 5). Cordless charging base (optional)
- 6). User manual
- 7). Multi-purpose battery charger (optional)

2.Product Introduction

XL-868 IOT portable data terminal is a Android architecture terminal, a collection of 1D/2D barcode reading and RFID reading function.

XL-868 adopts worldwide innovative technology, is compatible with Android 4.4 system, applies 4.5 inch capacitive screen.

3.Product Structure

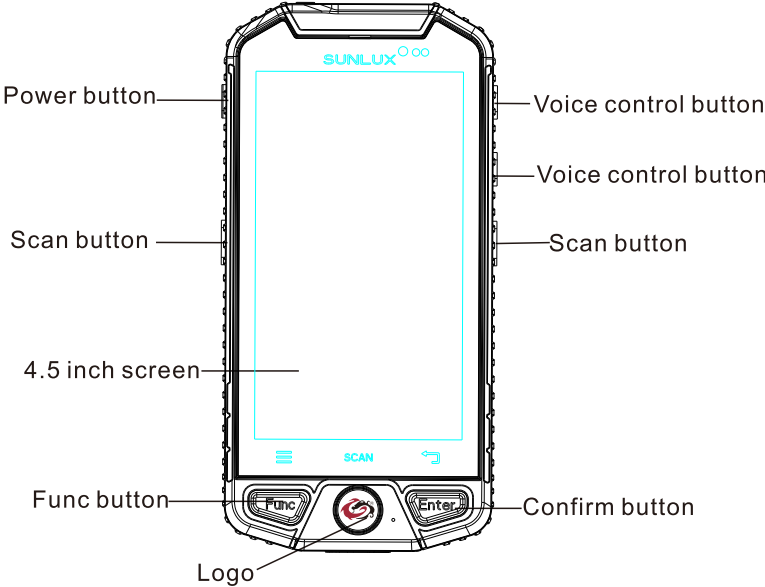


Figure .3-1 XL-868 front view

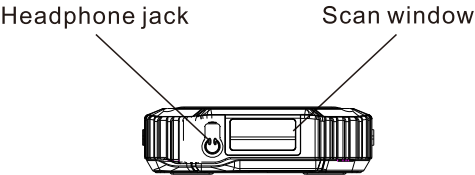


Figure .3-2 XL-868 bottom view of the bottom

Charge jack

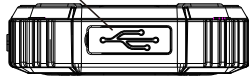


Figure .3-3 XL-868 bottom view of the bottom

Camera

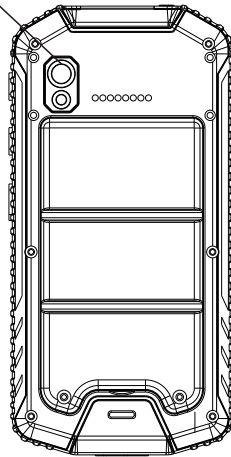


Figure .3-4 XL-868 back view

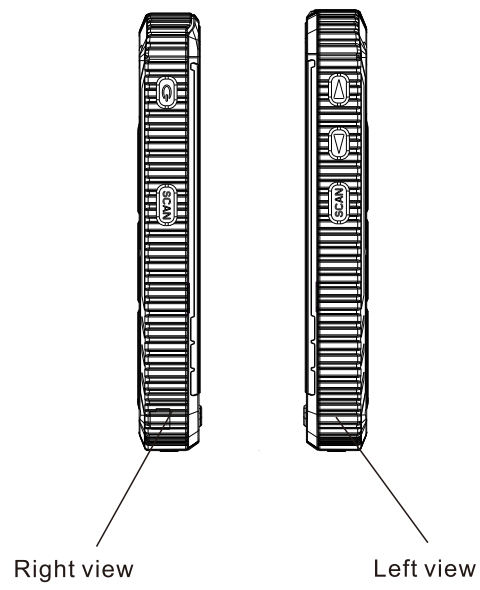


Figure .3-5 XL-868 side view

4. Specification

| Performance Parameters | |
|--------------------------|--|
| CPU | 4Nuclear 1.3GHz |
| Operating system | Android 4.4 |
| Storage | Mobile DOR 1G |
| Hard | Built-in (MLC NAND Flash 8GB) |
| | External (Micro SD, Maximum support 32GB) |
| Interface | USB 2.0 |
| Wireless Communication | WIFI 、GPS、 3G(WCDMA)、 Bluetooth |
| Physical Parameters | |
| Dimension | 142*70*21mm |
| Weight | 280g (battery included) |
| Material | ABS+PC |
| Screen | 4.5-inch TFT LCD (960 x 540) |
| Power Adaptor | Output: 5VDC, 2A Input: AC 100~240V 50~60Hz |
| Reading Mode | |
| 1D Barcode | ≥4mil 1D: Code 128, EAN-8, EAN-13, UPC-A, UPC-E, Code 39, Code93, EAN128, Codabar, Interleaved 2 of 5, Matrix 2 of 5, ISBN/ISSN |
| | ≥6mil 2D: PDF417, QR Code (Model 1/2, mirco), DataMatrix (ECC200, ECC000, 050, 080, 100, 140) etc. |
| RFID | 13.56MHz, 14443A/B, Mifare one |
| Environmental Parameters | |
| Operating Temperature | -10℃ ~ +50℃ |
| Storage Temperature | -20℃ ~ +65℃ |
| Storage Humidity | 5% ~ 95% Relative Humidity |
| Shock | 1.2m |
| Protection Class | IP 65 |

5. XL-868 Scanning

By default, the barcode scan module is turned off. Press the softkey "scan" to enable the scan function. If exceed the set time (10min, 30min, 60min optional), the system detects no scanning action, the barcode scan function will be turned off automatically.

5-1. Steps to Scan Barcodes

Turn on XL-868, enter to the home interface, and follow below steps. Figure.5-1-a→ Figure.5-1-b→ Figure.5-1-c→Figure .5-1-d.

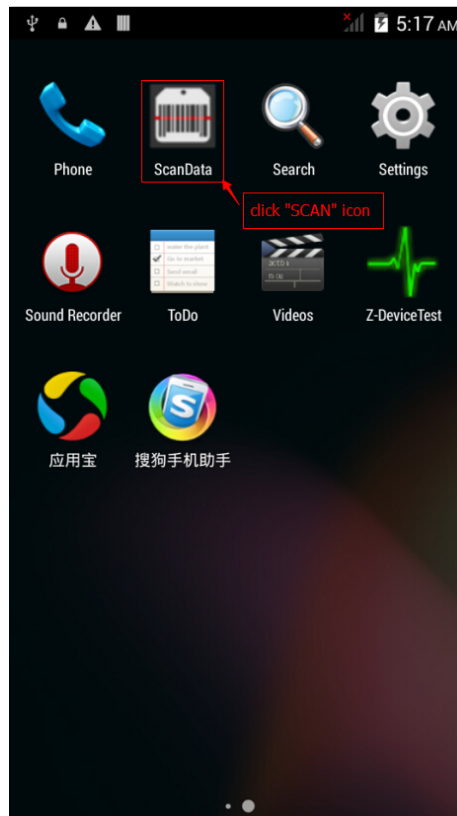


Figure.5-1-a

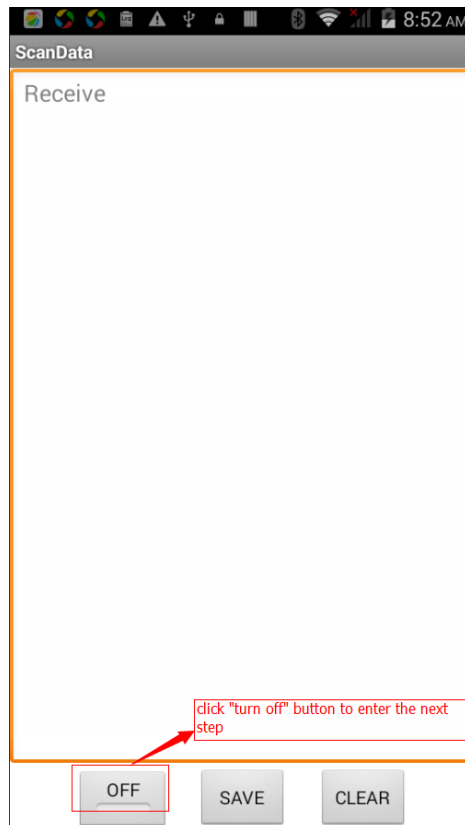


Figure.5-1-b

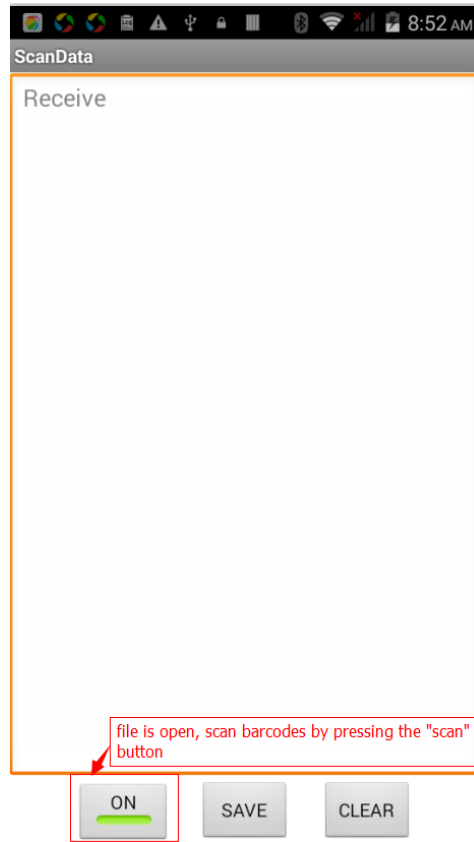


Figure.5-1-c

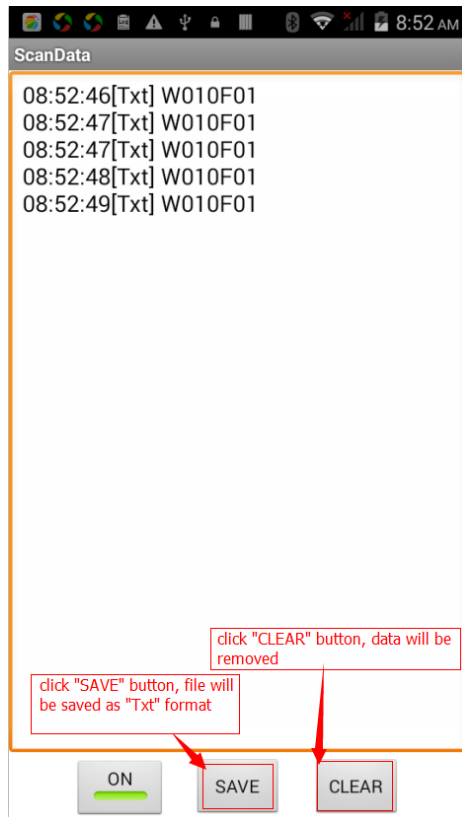


Figure.5-1-d

5-2. Exit Scanning Window

Double press "ESC" button within 2 second, will exit scanning window.

6. Search the Saved Scanning Information

Steps as following:

Figure.6-1-a→Figure.6-2-b→Figure.6-3-c
→Figure.6-4-d

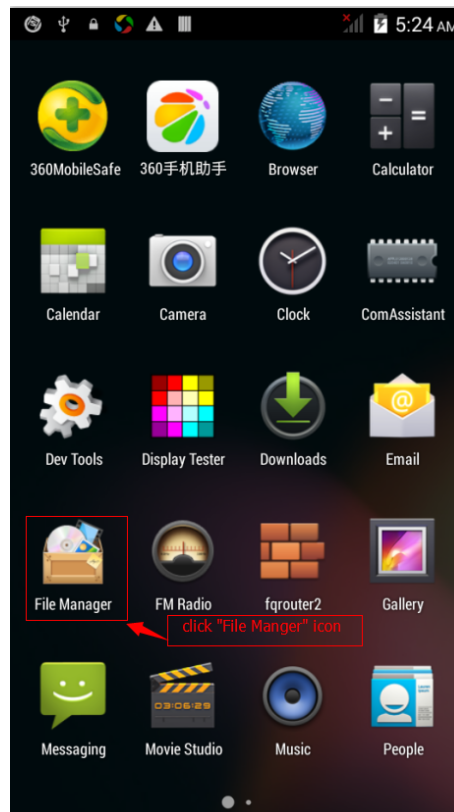


Figure.6-1-a

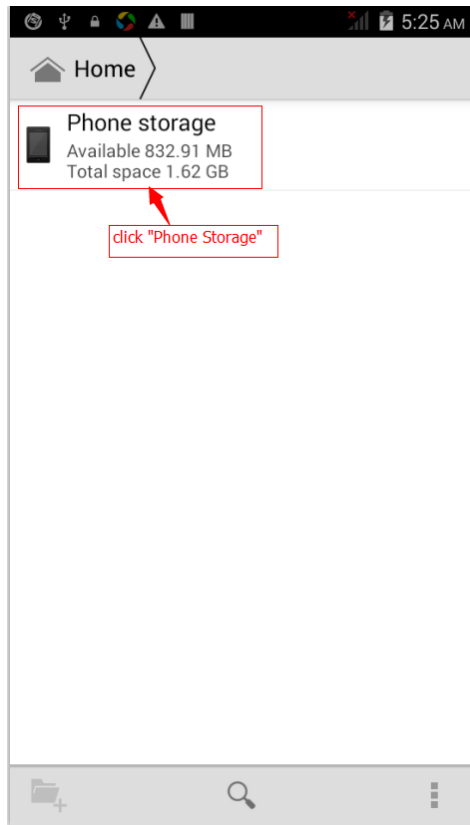


Figure.6-2-b

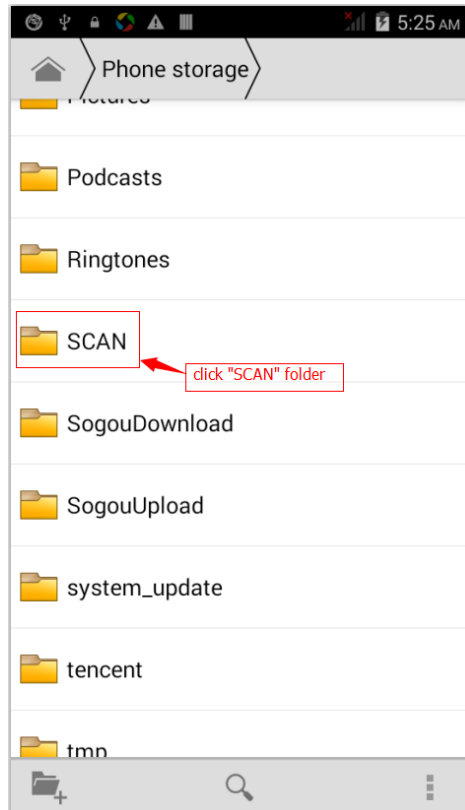


Figure.6-3-c

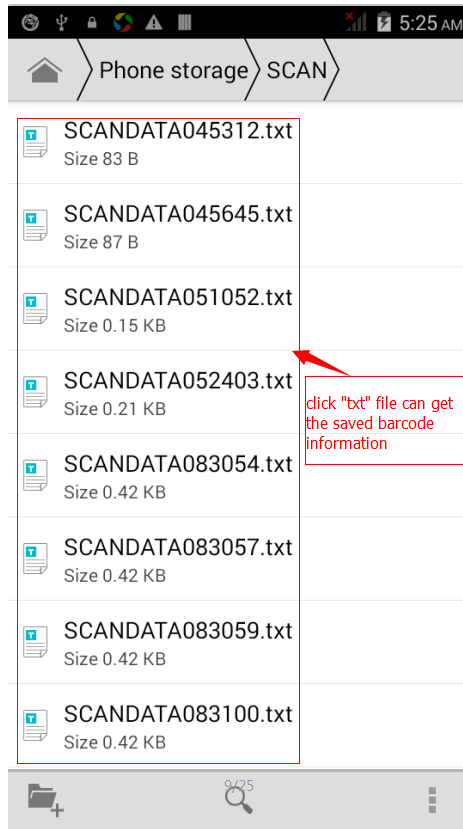


Figure.6-4-d

7.1D Barcode Scanner Setup Guide

7-1. Setup Procedure

The general procedure to program is as follow:

Scan the command symbol "PROGRAM";
Scan one or more parameters;
Scan the command symbol "END" to close procedure.

Example 1: To set the RS 232 parameters to 9600, N, 8,
1 .

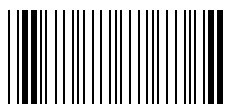
Scan the barcode "PROGRAM";
Scan "9600" "N" "8" "1";
Scan "END".

Example 2: To set additional digit for UPC/EAN.

Scan the barcode "PROGRAM";
Scan "Addenda 5 digit Enable";
Scan "END".



PROGRAM



END



DEFAULT



RS232

Tip:(*) denotes default setting. After set back to factory default, the scanner must be in "RS232 mode", So that it can work properly.



PROGRAM

7-2.Function Code Selection



Function
key On*



Function
key Off



Lower Case*



Upper Case



Shift



Num-Lock Off*



Num-Lock On



END

7-3.Language



US*



GERMAN



FRENCH



UK



SWISS



SWEDISH



JAPANESE



SPANISH



NORWEGIAN



ITALIAN



UNIVERSAL



PROGRAM

7-4.Scancode Delay



AT Delay



XT Delay

Example: If scanner needs 15ms of delay.

Scan "PROGRAM";

Scan "AT Delay";

Scan "1" "5";

Scan "AT Delay";

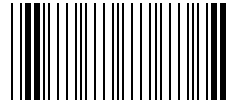
Scan"END".



Keycode Fast
Transmission*



Keycode Slow
Transmission



END

7-5. Wand Emulation

Output Level



Transmit Wand Emulation as Code 39*

Output Polarity



White High



Black High*

Scan Speed



Low(2ms)



Medium(1ms)



High(0.5ms)*

Check Digit



Check digit On



Check digit Off*



PROGRAM

7-6. Data Format

Terminator



TAB(CR/LF)



Enter(CR)*



Return(LF)



None

Code ID



None*



User Defined

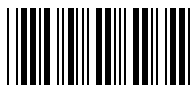


Default

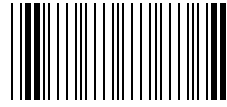
Code ID Setting



Define
Code ID



Code 39(M)
(Full ASCII)



END



Code 39(M)
(Standard)



EAN-13(F)



UPC-A(A)



EAN-8(F)



UPC-E(E)



Code 93(L)

Example: If barcode ID for code 39 (standard) is defined as "U" .

Scan "PROGRAM";

Scan "User Defined" "Defined Code ID" "Code 39 (standard)" "U" "Code 39 (standard)" "Defined Code ID";

Scan "END".



PROGRAM

Custom Editing



Single edit mode



Select from left



Select from right



Custom mode Enable

Example: If 5 digits from left are required.

Scan "PROGRAM";

Scan "Single edit mode" "Select from left" "0" "5" "Select from left" "Single edit mode" "Custom mode enable"

Scan "END".



Custom mode Disable*



Full data editing Disable



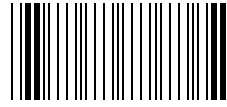
Full data editing Enable

Example: If 5 digits from the second position are required, scan as below.

Scan "PROGRAM";

Scan "Full editing Enable" "0" "2" "0" "5" "Full editing Enable" "Custom mode disable"

Scan "END".



END

Data Length



Exclude*



Include

Preamble/Postamble



Preamble



Postamble

Example: If preamble "SN" before data is required.

Scan "PROGRAM";

Scan "Preable" "S" "N" "Preamble";

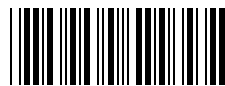
Scan "END".



Reserved1



Reserved2



Reserved3



PROGRAM

7-7. Reading Mode



Trigger On / Off*



Nomal Auto-
Trigger



Light Toggle-
Auto Trigger



Object Detection-
Auto Trigger



Light flashing-
Auto Trigger



Twice checking-
Auto Trigger



Testing



END

7-8. Redundancy



None*



2 times



3 times



4 times

7-9. Inter Character Delay



None*



1ms



5ms



10ms



PROGRAM

7-10. Barcode Space Setting



6X*



8X



10X



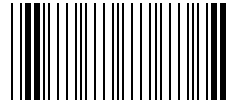
12X



14X



15X



END



20ms



50ms



100ms

7-11. Inter Message Delay



None*



50ms



200ms



500ms



1sec



2sec

7-12. Appendix

ASCII TABLE

| ASCII | HEX | DEC | ASCII | HEX | DEC |
|-------|-----|-----|-------|-----|-----|
| NUL | 00 | 0 | SP | 20 | 32 |
| SOH | 01 | 1 | ! | 21 | 33 |
| STX | 02 | 2 | " | 22 | 34 |
| ETX | 03 | 3 | # | 23 | 35 |
| EOT | 04 | 4 | \$ | 24 | 36 |
| ENQ | 05 | 5 | % | 25 | 37 |
| ACK | 06 | 6 | & | 26 | 38 |
| BEL | 07 | 7 | ' | 27 | 39 |
| BS | 08 | 8 | (| 28 | 40 |
| HT | 09 | 9 |) | 29 | 41 |
| LF | 0A | 10 | * | 2A | 42 |
| VT | 0B | 11 | + | 2B | 43 |
| FF | 0C | 12 | , | 2C | 44 |
| CR | 0D | 13 | - | 2D | 45 |
| SO | 0E | 14 | . | 2E | 46 |
| SI | 0F | 15 | / | 2F | 47 |
| DLE | 10 | 16 | 0 | 30 | 48 |
| DC1 | 11 | 17 | 1 | 31 | 49 |
| DC2 | 12 | 18 | 2 | 32 | 50 |
| DC3 | 13 | 19 | 3 | 33 | 51 |
| DC4 | 14 | 20 | 4 | 34 | 52 |
| NAK | 15 | 21 | 5 | 35 | 53 |
| SYN | 16 | 22 | 6 | 36 | 54 |
| ETB | 17 | 23 | 7 | 37 | 55 |
| CAN | 18 | 24 | 8 | 38 | 56 |
| EM | 19 | 25 | 9 | 39 | 57 |
| SUB | 1A | 26 | : | 3A | 58 |
| ESC | 1B | 27 | ; | 3B | 59 |
| FS | 1C | 28 | < | 3C | 60 |
| GS | 1D | 29 | = | 3D | 61 |
| RS | 1E | 30 | > | 3E | 62 |
| US | 1F | 31 | ? | 3F | 63 |

| ASCII | HEX | DEC | ASCII | HEX | DEC |
|-------|-----|-----|-------|-----|-----|
| @ | 40 | 64 | ` | 60 | 96 |
| A | 41 | 65 | a | 61 | 97 |
| B | 42 | 66 | b | 62 | 98 |
| C | 43 | 67 | c | 63 | 99 |
| D | 44 | 68 | d | 64 | 100 |
| E | 45 | 69 | e | 65 | 101 |
| F | 46 | 70 | f | 66 | 102 |
| G | 47 | 71 | g | 67 | 103 |
| H | 48 | 72 | h | 68 | 104 |
| I | 49 | 73 | i | 69 | 105 |
| J | 4A | 74 | j | 6A | 106 |
| K | 4B | 75 | k | 6B | 107 |
| L | 4C | 76 | l | 6C | 108 |
| M | 4D | 77 | m | 6D | 109 |
| N | 4E | 78 | n | 6E | 110 |
| O | 4F | 79 | o | 6F | 111 |
| P | 50 | 80 | p | 70 | 112 |
| Q | 51 | 81 | q | 71 | 113 |
| R | 52 | 82 | r | 72 | 114 |
| S | 53 | 83 | s | 73 | 115 |
| T | 54 | 84 | t | 74 | 116 |
| U | 55 | 85 | u | 75 | 117 |
| V | 56 | 86 | v | 76 | 118 |
| W | 57 | 87 | w | 77 | 119 |
| X | 58 | 88 | x | 78 | 120 |
| Y | 59 | 89 | y | 79 | 121 |
| Z | 5A | 90 | z | 7A | 122 |
| [| 5B | 91 | { | 7B | 123 |
| \ | 5C | 92 | | 7C | 124 |
|] | 5D | 93 | } | 7D | 125 |
| ^ | 5E | 94 | ~ | 7E | 126 |
| - | 5F | 95 | DEL | 7F | 127 |

FULL ASCII TABLE



!



"



#



\$



%



&



,



(



)



*



+



,



-



.



/



0



1



2



3



4



5



6



7



8



9



:



;



<



=



>



?



@



A



B



C



D



E



F



G



H



I



J



K



L



M



N



O



P



Q



R



S



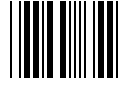
T



U



V



W



X



Y



Z



[



\



]



^



_



v



a



b



c



d



e



f



g



h



i



j



k



l



m



n



o



p



q



r



s



t



u



v



w



x



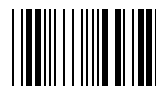
y



z



{



|



}



~



DEL



NUL



SOH



STX



ETX



EOT



ENQ



ACK



BEL



BS



HT



LF



VT



FF



CR



SO



SI



DLE



DC1



DC2



DC3



DC4



NAK



SYN



ETB



CAN



EM



SUB



ESC



FS



GS



RS



US



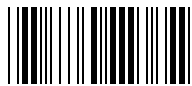
SP



F1(@A)



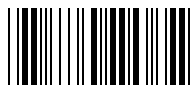
F2(@B)



F3(@C)



F4(@D)



F5(@E)



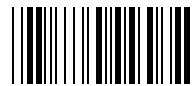
F6(@F)



F7(@G)



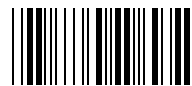
F8(@H)



F9(@I)



F10(@J)



F11(@K)



F12(@L)



HOME(&A)



END(&B)



Cursor Right(&C)



Cursor Left(&D)



Cursor Up(&E)



Cursor Down(&F)



PgUp(&G)



PgDn(&H)



TAB(&I)



Back TAB(&J)



ESC(&K)



ENTER(&L)



Return(&O)



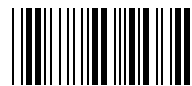
CTRL ON(&P)



CTRL OFF(&Q)



ALT ON(&R)



ALT OFF(&S)



SHIFT ON(&T)



SHIFT OFF(&U)

8.2D Barcode Scanner Setup Guide

8-1. 2D Barcode Scanner Overall Specification

| | |
|--|---|
| Image captuer specifications | |
| Image Sensor | CMOS, gray scale |
| Resolution | 752×480 pixels |
| Illumination specifications | |
| Light Source | LED (618–633nm) |
| Barcode scan specifications | |
| 1D | ≥4mil EAN-8, EAN-13, UPC-A, UPC-E, Code 39, Code 93, Code 128, Codabar, Industrial 2 of 5, Interleave 2 of 5, ISBN/ISNN, China Postage, etc. |
| 2D | ≥6mil 2D: PDF417, QR Code (Model 1/2, mirco), DataMatrix (ECC200,ECC000,050,080, 100,140)etc. |
| Precision | 40mm-170mm |
| Print Ratio | ≥30% |
| Sensitivity | Roll 360° @ 0° Pitch and 0° Skew Yaw ±60° @ 0° Roll and 0° Pitch Pitch ±55° @ 0° Roll and 0° Pitch |
| Electrical and Mechanical specifications | |
| Voltage | DC 3.3V |
| Current | Max 350mA Working 300mA Idle 60mA |

8-2. Programming the Scanner

Programming Barcode Data

Programming barcode data (e.g. WFFD980) can be transmitted to the Host. To enable this feature, scan the barcode below. After the feature is enabled, programming barcodes will be handled as non-programming barcodes and they cannot be used to configure the scan engine. The barcode data will be sent to the Host when a programming barcode is scanned and decoded. By default, the XL-868 does not transmit programming barcode data.

After the engine is powered down and re-energized, this feature will be automatically disabled (i.e. the engine does not transmit programming barcode data) and the ability of programming barcodes to configure the engine



Transmit the Programming
Barcode Data

Restore Factory Setting

Scanning the following barcode can restore the scanner to the factory defaults.



WFFD980

Restore Factory Settings

Illumination



Off



*Normal



Always On

Notification



Mute



*Enable all notification beeps



*Beep on Good Decode



Do Not Beep on Good Decode



Low



*Medium



High

Scan Mode



*Manual Mode



Continuous Mode



Sense Mode



Command Trigger Mode

Video Reverse



Video Reverse ON



*Video Reverse OFF

8-3. Serial Port Mode Settings

Baud Rate

| | |
|---|--------|
|  | *9600 |
|  | 1200 |
|  | 2400 |
|  | 4800 |
|  | 14400 |
|  | 19200 |
|  | 38400 |
|  | 57600 |
|  | 115200 |

8-4. Prefix and Suffix



Enable AIM ID Prefix



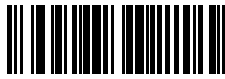
*Disable AIM ID Prefix



Enable CODE ID Prefix



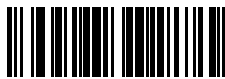
*Disable CODE ID Prefix



* Disable Terminating
Character Suffix



Append CR



Append CRLF



Append TAB

8-5. Barcode parameter settings



*Enable All Symbologies



Disable All Symbologies



Enable 1D Symbologies



Disable 1D Symbologies



Enable 2D Symbologies



Disable 2D Symbologies

1D Symbolologies



Restore the Factory Defaults
of Code 128



Enable Code 128



*Disable Code 128



Restore the Factory Defaults
of UCC/EAN-128



Enable UCC/EAN-128



*Disable UCC/EAN-128



Restore the Factory Defaults
of AIM 128



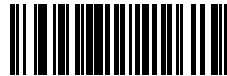
Enable AIM 128



*Disable AIM 128



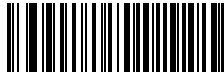
Restore the Factory Defaults
of EAN-8



Enable EAN-8



*Disable EAN-8



Restore the Factory Defaults
of ISSN



*Enable ISSN



Disable ISSN



Restore the Factory Defaults
of ISBN



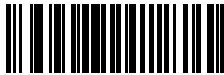
*Enable ISBN



Disable ISBN



Restore the Factory Defaults
of UPC-E



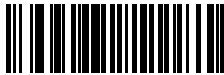
*Enable UPC-E



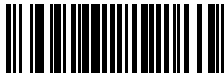
Disable UPC-E



Restore the Factory Defaults
of UPC-A



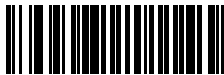
*Enable UPC-A



Disable UPC-A



Restore the Factory Defaults
of Interleaved 2 of 5



*Enable Interleaved 2 of 5



Disable Interleaved 2 of 5



Restore the Factory Defaults
of Matrix 2 to 5



*Enable Matrix 2 to 5



Disable Matrix 2 to 5



Restore the Factory Defaults
of Industrail 25



*Enable Industrail 25



Disable Industrail 25



Restore the Factory Defaults
of Code 39



*Enable Code 39



DisableCode 39



*Enable Full ASCII



Disable Full ASCII



Restore the Factory Defaults
of Codabar



*Enable Codabar



Disable Codabar



Restore the Factory Defaults
of Code 93



*Enable Code 93



Disable Code 93



Restore the Factory Defaults
of Code 11



*Enable Code 11



Disable Code 11



Restore the Factory Defaults
of Plessey



*Enable Plessey



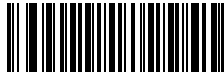
Disable Plessey



Restore the Factory Defaults
of MS2-Plessey



*Enable MS2-Plessey



Disable MS2-Plessey



Restore the Factory Defaults
of RSS-14



*Enable RSS-14



Disable RSS-14



Restore the Factory Defaults
of RSS-Limited



*Enable RSS-Limited



Disable RSS-Limited



Restore the Factory Defaults
of RSS-Expand



*Enable RSS-Expand



Disable RSS-Expand

2D Symbologies



Restore the Factory Defaults
of PDF417



*Enable PDF417



Disable PDF417



Restore the Factory Defaults
of Data Matrix



*Enable Data Matrix



Disable Data Matrix



Restore the Factory Defaults
of QR Code



*Enable QR Code



Disable QR Code

8-6. Digit Barcodes

Read data code completion must be on the next page to read "save" to save the data set.



0



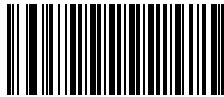
1



2



3



4



5



6



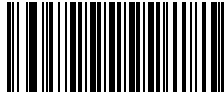
7



8



9



A



B



C



D



E



F

Save/Cancel Barcodes



12

Save



11

Cancel the Last Digit



10

Cancel All Digits

9. RFID Reader Setup Guide

By default, the RFID reader is turned off. Press the softkey "scan" to enable the scan function. If exceed the set time (10min, 30min, 60min optional), the system detects no reading or writing action, the RFID scan function will be turned off automatically.

Setting steps:

1. Read the serial 3 (/ dev / ttyMT3)
2. Send search card command
3. send read command after find the card
4. display the card information

Attached: Instruction

Find card

<- 02 02 52 (02 is command code, 52 is RegMfOutSelect)
-> 03 00 04 00 (The second byte is successful command code, the failure code is FE, 04 indicate Mifare One card)

Read the card

<- 01 03 (03 is command code)
-> 05 00 52 00 75 7A (The second byte 00 is successful command code, the failure return code is FE, 52 00 75 7A is the card serial number)