



2D Barcode Scanner

USER'S GUIDE

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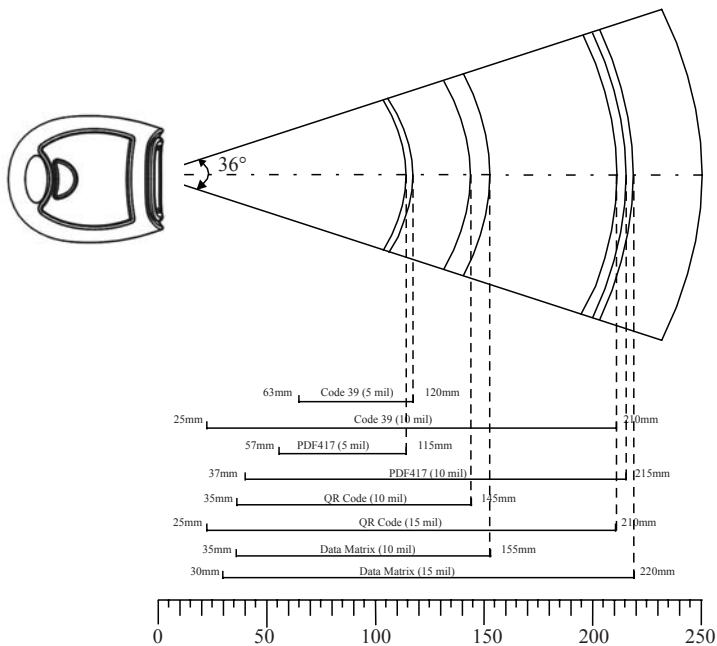
Getting to Start

Specification

Performance		
Image Sensor	CMOS	
Resolving	752 * 480	
Interface	RS232 / HID-KBW / UDP / USB COM Port Emulation / HID-POS	
Symbologies	2D	PDF417, QR Code(Model 1/2), DataMatrix (ECC200, ECC000, 050, 080,100,140), Aztec, Maxicode, etc.
	1D	Code128, EAN-13, EAN-8, Code39, UPC-A, UPC-E, Codabar, China post 25,Interleaved 2 of 5, ISBN, Code 93, GS1 Databar, Code 11,etc
Precision	≥ 5mil	
Light Source	LED(630 nm ± 10 nm)	
Light Intensity	300 LUX (130 mm)	
Depth of Scan Field	30 mm ~ 445 mm	
Print Contrast Signal	≥30%	
Roll	360°	
Pitch	45°	
Yaw	45°	
Illumination	0 ~ 100,000 LUX	
Mechanical/ Electrical		
Power Consumption	1.65 W	
Voltage	DC 5 V	
Current	Max	330 mA
	Oper.	290 mA
	Idle	200 mA
Weight	235g	
Environment		
Operate Temperature	-5° C - +45° C	
Storage Temperature	-40° C - +60° C	
Humidity	5% - 95% (non-condensing)	
Certificates		
FCC Part15 Class B, CE EMC Class B		

Getting to Start

Distance of Field



Getting to Start

ON, OFF, IDLE, RESTART

Power On

Connect Scanner and Host. One click the "Trigger". Scanner powers on and in "Idle" (ready to use) state (factory default).

Power Off

There are 4 ways to "Power OFF":

- » Remove Cable Off scanner ;
- » Remove Power Adapter Off RS232 Cable;
- » Remove USB Cable Off the Host;
- » Remove PS/2 cable off the Host or power adaptor off.

IDLE

When scanner is NOT reading, it is in "IDLE mode".

No reading attempt within a timeout, the Imager switch to IDLE mode automatically.

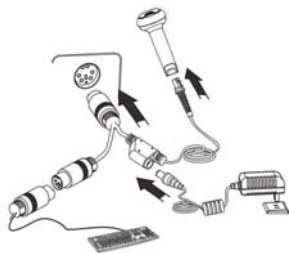
RESTART

If Scanner halted and does not respond to operations, please "Restart" by "Power OFF", and then "Power ON".

Getting to Start

Connect Scanner to the Host

Connecting with PS/2 Cable



- 1、 Insert PS/2 cable (RJ 45 male DIN) into Scanner cable slot;
- 2、 Insert PS/2 cable (PS/2 male DIN) into Host PS/2 female slot;
- 3、 If necessary, connect PS/2 cable and the power adapter;
- 4、 If necessary, keyboard can connect to female slot on the PS/2 cable.

Connecting with USB Cable

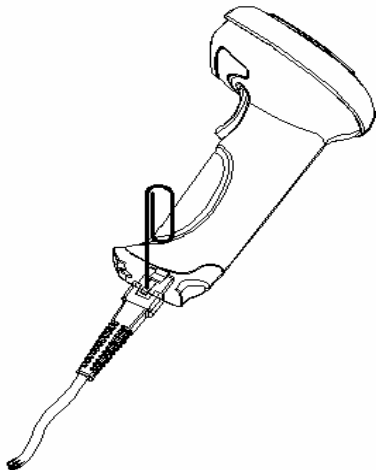


- 1、 Insert USB Cable (RJ45 male head) into Scanner cable slot;
- 2、 Insert USB Cable (USB male head) into Host' s (female) USB connector.

Connecting with RS232 Cable



- 1、 Insert RS232 cable (RJ45 male head) into Scanner cable slot;
- 2、 Insert RS232 cable (RS232 male head) into Host' s (female) RS232 connector;
- 3、 Connect RS232 cable and the power adapter.



A Pin that fit the Scanner “dismount hole” is needed. A paper clip could be ideal. Stretch one end of the paper clip to fit the “Dismount Hole”. Follow the steps:

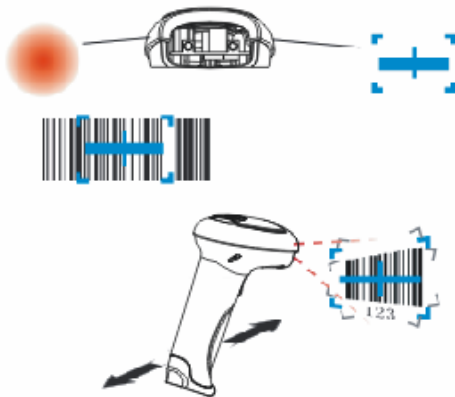
- 1、 For RS232 and PS/2 connections, unplug the power adaptor.
- 2、 Insert the Pin into “Dismount Hole” and keep some pressure.
- 3、 Pull out the cable gently.
- 4、 Pull out the Pin after the cable is removed.
- 5、 Unplug the connector from the Host.

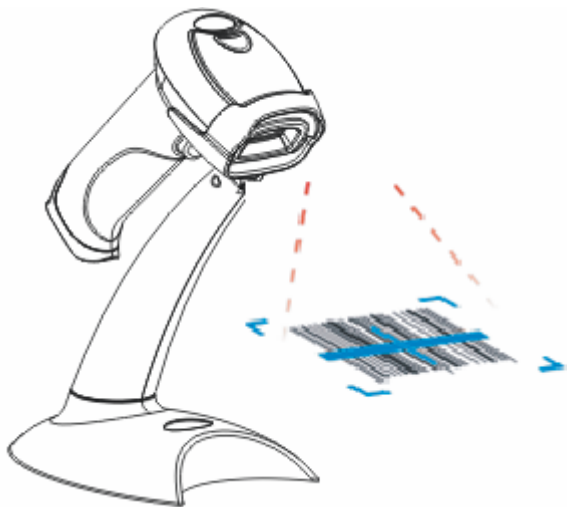
Reading

Hand-held Mode

- 1、 Ensure Scanner, cables, and the Host are connected, then turn the unit Power ON
- 2、 Press & hold Trigger. Illumination LED and Aiming LED cast an Illumination Pattern (red light) and an Aiming Pattern (blue light);
- 3、 Keep Illumination Pattern in the center of a bar code. Zoom in and zoom out to allocate the Optimum Reading Stance.
- 4、 On a successful reading, there' ll be a beep sound, illumination & aiming patterns die out. The scanner then transmits barcode message to the Host.

NOTE: Experiences tell a certain range of distances has higher successful reading rate. This range is the Optimum Reading Stance.





- 1、 Select reading mode “sensor mode” or “continuous mode” when working in hands-free mode.
- 2、 Adjust the stand height for the optimum reading stance.

Programming Code

Query

“Send Product Info” , the engine sends product information to the Host immediately. “Send Sys Info when Power ON” , the engine sends product information through RS232(only) to the Host after Power ON.



Send Product Info



Send Sys Info when Power ON



Do not Send Product Info when Power ON
(Factory Default)

Code Programming ON



Code Programming OFF



The system information is provided as follows:

Title	Remarks
Firmware Ver	Device Firmware Version
Build Time	Device Firmware Version Establishing Time
Device ID	Device Type
App Ver	Device Application Version
uIMG Ver	Device uIMG Version
Date	Device Manufacture Date
S/N	Device serial number
ESN	User-defined device serial number
Manufacture ID	Device Name
Interface	1 types of communication interfaces: TTL232 or RS232, baud rate, parity check, data bits, stop bit
1D	Indicate that reading 1D is allowed.
2D	Indicate that reading 2D is allowed.
Scan Mode	1. Manual Scan 2. Auto Scan 3. Continuous Scan

Programming Code

Factory Default



Load All Factory Default

Code Programming ON



Code Programming OFF



Part of Factory Default

Subject	Factory Default
Interface	RS232 and USB Self-adaption , The default value is as below: RS232 (Baud Rate: 9600bit/s,Parity Check:No Check,Data / Stop Bit:8 bits/1 bit); USB(HID-KBW)
Beep	On
Scan Mode	Hand-held Mode
1D 1D Symbols (Enable)	Code128, EAN-13, EAN-8, Code39, UPC-A, UPC-E, Codabar, China post 25,Interleaved 2 of 5, ISBN/ISSN, Code 93, GS1 Databar, Code 11,etc
2D 1D Symbols (Enable)	PDF417, QR Code(Model 1/2), DataMatrix (ECC200, ECC000, 050, 080,100,140), Aztec, Maxicode, LP Code, etc.

Programming Code

Reading Mode

» **Hand-held Mode:** Pull and keep holding the trigger line to read. Complete one reading or release the trigger to terminate reading status.

» **Auto Mode:** The ambient luminance change in front of the engine automatically initiates reading. After completion of reading, the engine goes to idle. Both luminance change and the Trigger can initiate reading when idle.

» **Continuous Mode:** Pull the Trigger line low to start reading. The engine will keep reading. To stop, pull trigger line low again.

Code Programming ON



Code Programming OFF



Hand-held Mode
(Factory Default)



Continuous Mode



Auto Mode

Programming Code

RS232 Programming

Baud Rate

Under RS232 connection, the engine and the Host should set communication baud rate to the same to keep normal communication. Baud rate is the bits transmitted per second (8 bits per bytes). The engine and the Host must communicate at the same baud rate. The scanner supports baud rate as the following:



9600
(Factory Default)



2400



14400



38400



115200

Code Programming ON



Code Programming OFF



1200



4800



19200



57600

Programming Code

RS232 Programming

Parity Check



NO Check
(Factory Default)



Even Check



Odd Check

Code Programming ON



Code Programming OFF



Stop Bits



1 Stop Bit
(Factory Default)



2 Stop Bits

Programming Code

RS232 Programming

Data Bits Transmitted



8 Data Bits
(Factory Default)



7 Data Bits



6 Data Bits



5 Data Bits

Code Programming ON



Code Programming OFF





Select USB HID-KBW

Code Programming ON



Code Programming OFF



Select USB COM Port Emulation



Select USB DataPipe



Select USB HID-POS

Note: A driver has to be installed before using USB DataPipe and USB COM Port Emulation.

Programming Code

USB HID-KBW Programming

Keyboard Country

The keyboard arrangements and country codes vary in different countries. Refer country codes to the table “USB Country Keyboard Types”. Follow the steps mentioned below to program.

1. “Code Programming ON”
2. “Select Country Code”
3. Read digit codes (See “country code” and appendix for digit code)
4. “Save ”
5. “Code Programming OFF”

Code Programming ON



Code Programming OFF



Select Country Code

Country Code

Country/Language	Code	Country/Language	Code
U.S.(Factory Default)	0	(Dutch)	14
Belgium	1	Norway	15
Brazil	2	Poland	16
Canada(French)	3	Portugal	17
Czechoslovakia	4	Romania	18
Denmark	5	Russia	19
Finland(Swedish)	6	Slovakia	21
France	7	Spain	22
Germany/Austria	8	Sweden	23
Greece	9	Switzerland(German)	24
Hungary	10	Turkey F	25
Israel(Hebrew)	11	Turkey Q	26
Italy	12	U.K	27
Latin-American	13	Japan	28

Programming Code

USB HID-KBW Programming

Keystroke Delay

This parameter sets the delay, in milliseconds, between emulated keystrokes. Scan programming code below to increase the delay when the Host require a slower transmission of data.

Code Programming ON



Code Programming OFF



Short Delay(Continuous keystroke)
(Factory Default)



Medium Delay(20ms)



Long Delay(40ms)

Caps Lock Override

The case of the data is inverted regardless of the state of the Caps Lock key on the Host. Lower case and upper case are converted correspondingly.



No Caps Lock Override
(Factory Default)



Caps Lock Override

Programming Code

USB HID-KBW Programming

Convert Case

The Imager converts all barcode messages to the selected case.

Code Programming ON



Code Programming OFF



No Case Conversion
(Factory Default)



Convert All to Lower Case



Convert All to Upper Case

Programming Code

Beeper

Decoding Beep



Beep ON
(Factory Default)



Beep OFF

Code Programming ON



Code Programming OFF



Volume



Loud
(Factory Default)



Medium



Low

Beep Denotation (Beeper Definitions)

Beep	Denotation
low-higher-higher-higher	Power ON completed
1 beep	successful reading of an ordinary barcode
2 beeps	successful reading of an programming barcode
3 short low-2 high	reading failure
1 long low	Unknown Character, Virtual Keypad (USB connection)

Programming Code

Line Feed and Carriage Return

Need to program stop suffix and enable it supports line feed and carriage return.

Program Stop Suffix

Read “Program Stop Suffix” . Then program stop suffix byte(s) to end the suffix, read “Save” . The stop suffix byte is programmed in its hex values. For Windows OS, the hex values of “line feed and carriage return” are “0X0D/0X0A” .



Program Stop Suffix

Code Programming ON



Code Programming OFF



Stop Suffix Enable and Disable



Disable Stop Suffix
(Factory Default)



Enable Stop Suffix

Steps for Windows OS to achieve “line feed and carriage return”

- 1、 Read “Code Programming ON”
- 2、 Read “Program Stop Suffix”
- 3、 Read “0” “D” “0” “A”
- 4、 Read “Save”
- 5、 Read “Code Programming OFF”
- 6、 Read “Allow Stop Suffix” to enable above programming. A line feed will appear to the right of a barcode.

Programming Code

1D Symbols

All 1D Symbols



Enable Reading All 1D

Code Programming ON



Code Programming OFF



Disable Reading All 1D

Code 128



Disable Code 128



Enable Code 128
(Factory Default)



Min Message Length (default: 1)



Max Message Length (default: 48)

Programming Code

1D Symbols

EAN-8



Enable EAN-8
(Factory Default)

Code Programming ON

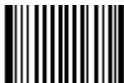


Code Programming OFF



Disable EAN-8

EAN-13



Enable EAN-13
(Factory Default)



Disable EAN-13

Programming Code

1D Symbols

UPC-E



Enable UPC-E
(Factory Default)

Code Programming ON



Code Programming OFF



Disable UPC-E

UPC-A



Enable UPC-A
(Factory Default)



Disable UPC-A

Programming Code

1D Symbols

Interleaved 2 of 5



Enable Interleaved 2 of 5
(Factory Default)

Code Programming ON



Code Programming OFF



Disable Interleaved 2 of 5



Min Message Length (default: 4)



Max Message Length (default: 80)

Programming Code

1D Symbols

Code 39

Code Programming ON



Enable Code 39
(Factory Default)

Code Programming OFF



Disable Code 39



Min Message Length (default: 1)



Max Message Length (default: 48)

GS1 Databar



Enable GS1 Databar
(Factory Default)



Disable GS1 Databar

Programming Code

2D Symbols

All 2D Symbols



Enable Reading All 2D

Code Programming ON

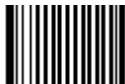


Code Programming OFF



Disable Reading All 2D

PDF417



Enable PDF417
(Factory Default)



Disable PDF417

Data Matrix



Enable Data Matrix
(Factory Default)



Disable Data Matrix

Programming Code

2D Symbols

QR Code



Enable QR Code
(Factory Default)

Code Programming ON



Code Programming OFF



Disable QR Code

Aztec

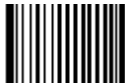


Enable Aztec



Disable Aztec
(Factory Default)

Maxicode



Enable Maxicode



Disable Maxicode
(Factory Default)

Appendix

B. Digit Code and Save

It is must to read save after reading digit code.



0



1



2



3



4



5



6



7



8



9



A



B



C



D



E



F



Save

Appendix

C. Troubleshooting

Problem	Possible Cause	Possible Solution
Scanner does not turn on	With RS232 communication, adapter not inserted	Insert the adapter
	With RS232 communication, communication interface fails.	Connect communication port in right way
	With USB or PS/2 communication, communication interface fails.	Connect communication port in right way
Scanner does not send data to host computer	Scanner is not connected to the host.	Check all cable to host computer.
Receive garbled with RS232	Scanner and the host baud rate settings are inconsistent	Check scanner and PC-side communication port baud rate settings are the same
Scanner does not read barcodes	Did not enable the barcode	Please enable it
	Scanner can not read the barcode by it's firmware.	Please contact the dealer or us